

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards (WQS) of 9 VAC 25-260. The proposed discharge will result from the operation of a municipal sewage treatment plant (SIC Code: 4952 - Sewerage Systems). This permit action consists of reissuing the permit with revisions to the permit, as needed, due to changes in applicable laws, guidance, and available technical information.

1. Facility Name and Address:
Mt. Jackson STP
PO Box 487
Mt. Jackson, Virginia 22842
Location: 556 Red Banks Road, Mt. Jackson, Virginia 22842
2. Permit No. VA0026441; Expiration Date: December 31, 2011
3. Owner: Town of Mt. Jackson
Contact Name: Charles K. Moore
Title: Town Manager
Telephone No: 540.477.2121

4. Description of Treatment Works Treating Domestic Sewage:
Total Number of Outfalls – 1

Mt. Jackson STP primarily receives sewage wastewater generated by residents and businesses in the Town of Mount Jackson and surrounding Shenandoah County with the balance of the flow generated by commercial and industrial contributors (see permit reissuance application Form 2A, Part F). The treatment units comprising the STP are shown in the schematics included in the permit reissuance application.

Average Discharge Flow (May 2009 – May 2011) = 0.33 MGD
Design Average Flow = 0.70 MGD

5. Application Complete Date: July 18, 2011

Permit Writer: Bev Carver	Date: September 14, 2011
Reviewed By: Dawn Jeffries	Date: September 22, 2011

Public Comment Period: October 8, 2011 to November 7, 2011

6. Receiving Stream Name: North Fork Shenandoah River
River Mile: Outfall 001: 70.04
Use Impairment: Yes
Special Standards: pH
Tidal Waters: No
Watershed Name: VAV – B48R North Fork Shenandoah River/Mill Creek
Basin: Potomac; Subbasin: Shenandoah
Section: 6; Class: IV
7. Operator License Requirements per 9 VAC 25-31-200.C: Class II
8. Reliability Class per 9 VAC 25-790: Class II (assigned w/ April 13, 2009, Certificate to Operate (CTO))

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9. Permit Characterization:

- ☐ Private ☐ Federal ☐ State ☒ POTW ☐ PVOTW
☐ Possible Interstate Effect ☐ Interim Limits in Other Document (attach copy of CSO)

10. Discharge Location Description and Receiving Waters Information: Appendix A

11. Antidegradation (AD) Review & Comments per 9 VAC 25-260-30:

Tier Designation: North Fork Shenandoah River: Tier 2

The State Water Control Board's WQS include an AD policy. All state surface waters are provided one of three levels of AD protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 waters have water quality that is better than the WQS. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 waters are exceptional waters and are so designated by regulatory amendment. The AD policy prohibits new or expanded discharges into exceptional waters.

The AD review begins with a Tier determination. North Fork Shenandoah River downstream of the facility discharge location is determined to be Tier 2 because there is no indication that WQS in the receiving stream are being violated or barely being met at the discharge point. Antidegradation baselines have been calculated for the North Fork Shenandoah River at Outfall 001 as shown in Appendix B and are summarized below.

<u>Antidegradation Baselines</u>		
<u>Parameter</u>	<u>Baseline</u>	
DO	6.8 mg/L	
	<u>Acute</u>	<u>Chronic</u>
Ammonia-N (Jun-Dec)(Annual)	0.81 mg/L	0.15 mg/L
Ammonia-N (Jan-May)(Wet Season)	0.70 mg/L	0.20 mg/L
TRC	0.0048 mg/L	0.0028 mg/L
Other WQS Toxic Parameters	See Instream Baselines in WQS/WLA Analysis in Appendix B, page 4 and 5	

12. Site Inspection: Performed by Bev Carver on July 18, 2011

13. Effluent Screening and Effluent Limitations: Appendix B

14. Whole Effluent Toxicity (WET) Program Requirements per 9 VAC 25-31-220.D: Appendix B

15. Sewage sludge utilization and disposal options include the following:

- land application of biosolids by Houff's Feed & Fertilizer Company under their VPA Permits (will be an option once acceptance letter is received from Houff's Feed & Fertilizer)
- transport of sewage sludge to the Shenandoah County Landfill
- transport of sewage sludge to the Battle Creek Landfill

16. Bases for Special Conditions: Appendix C

17. Material Storage per 9 VAC 25-31-280.B.2: This permit requires that the facility's O&M Manual include information to address the management of wastes, fluids, and pollutants which may be present at the facility, to avoid unauthorized discharge of such materials.

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18. Antibacksliding Review per 9 VAC 25-31-220.L: This permit complies with Antibacksliding provisions of the VPDES Permit Regulation.
19. Impaired Use Status Evaluation per 9 VAC 25-31-220.D: Mt. Jackson STP was included in the North Fork Shenandoah River Bacteria TMDL (approved September 26, 2006) and was assigned the following Wasteload Allocation (WLA):

E. coli: 1.04×10^{12} cfu/yr (based on a design flow of 0.6 MGD and a concentration of 126 cfu/100 mL)
20. Regulation of Users per 9 VAC 25-31-280.B.9: N/A – This facility is owned by a municipality.
21. Storm Water Management per 9 VAC 25-31-120: Application Required? ☒ Yes ☐ No
This facility provided a No Exposure Certification (NEC) on June 7, 2011.
22. Compliance Schedule per 9 VAC 25-31-250: There are no compliance schedules included in the reissued permit.
23. Variances/Alternative Limits or Conditions per 9 VAC 25-31-280.B, 100.J, 100.P, and 100.M: The applicant requested a waiver for sampling fecal coliform and to only submit one set of analytical test results for the sewage sludge as part of the permit application. The waiver request was approved.
24. Financial Assurance Applicability per 9 VAC 25: N/A – This facility is owned by a municipality.
25. Virginia Environmental Excellence Program (VEEP) Evaluation per § 10.1-1187.1-7: At the time of this reissuance, is this facility considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level? ☐ Yes ☒ No
26. Nutrient Trading Regulation per 9 VAC 25-820: See Appendix B
General Permit Required: ☒ Yes ☐ No
27. Threatened and Endangered (T&E) Species Screening per 9 VAC 25-260-20 B.8: Because this is not an issuance or reissuance that allows increased discharge flows, T&E screening is not automatically required. However, in accordance with the VPDES Memorandum of Understanding, T&E screening was coordinated on June 20, 2011 through DCR & DGIF based upon request. Comments were received from DCR on July 13, 2011 and from US Fish and Wildlife Service July 28, 2011 and are included in the permit processing file. Comments were considered in the drafting of the permit and were also forwarded to the permittee.
28. Public Notice Information per 9 VAC 25-31-280.B: All pertinent information is on file, and may be inspected and copied by contacting Bev Carver at: DEQ-Valley Regional Office, P.O. Box 3000, Harrisonburg, Virginia 22801, Telephone No. (540) 574-7805, beverley.carver@deq.virginia.gov.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

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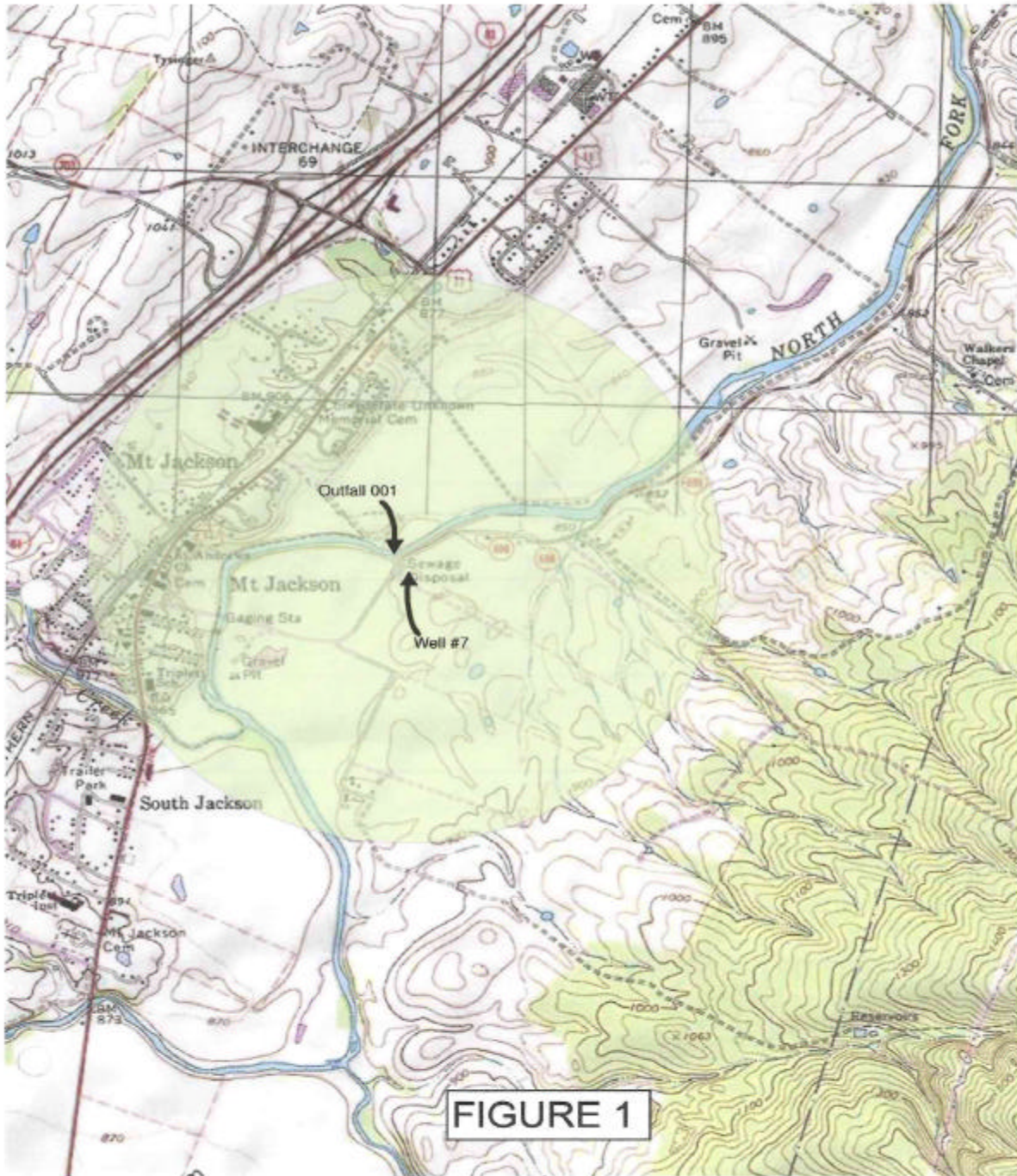
29. Historical Record:

- September 3, 1957 – Plans & Specifications were submitted for a primary treatment facility serving 1,500 people in Mt. Jackson.
- August 17, 1984 – A CTO was issued for a 0.20 MGD facility.
- April 7, 1989 – Plans and Specifications were approved for dechlorination facilities.
- April 13, 2009 – A CTO was issued for the 0.70 MGD facility.

APPENDIX A

DISCHARGE LOCATION AND RECEIVING WATERS INFORMATION

Mt. Jackson STP discharges to the North Fork Shenandoah River in Shenandoah County. The topographical map below shows the location of the treatment facility and Outfall 001.



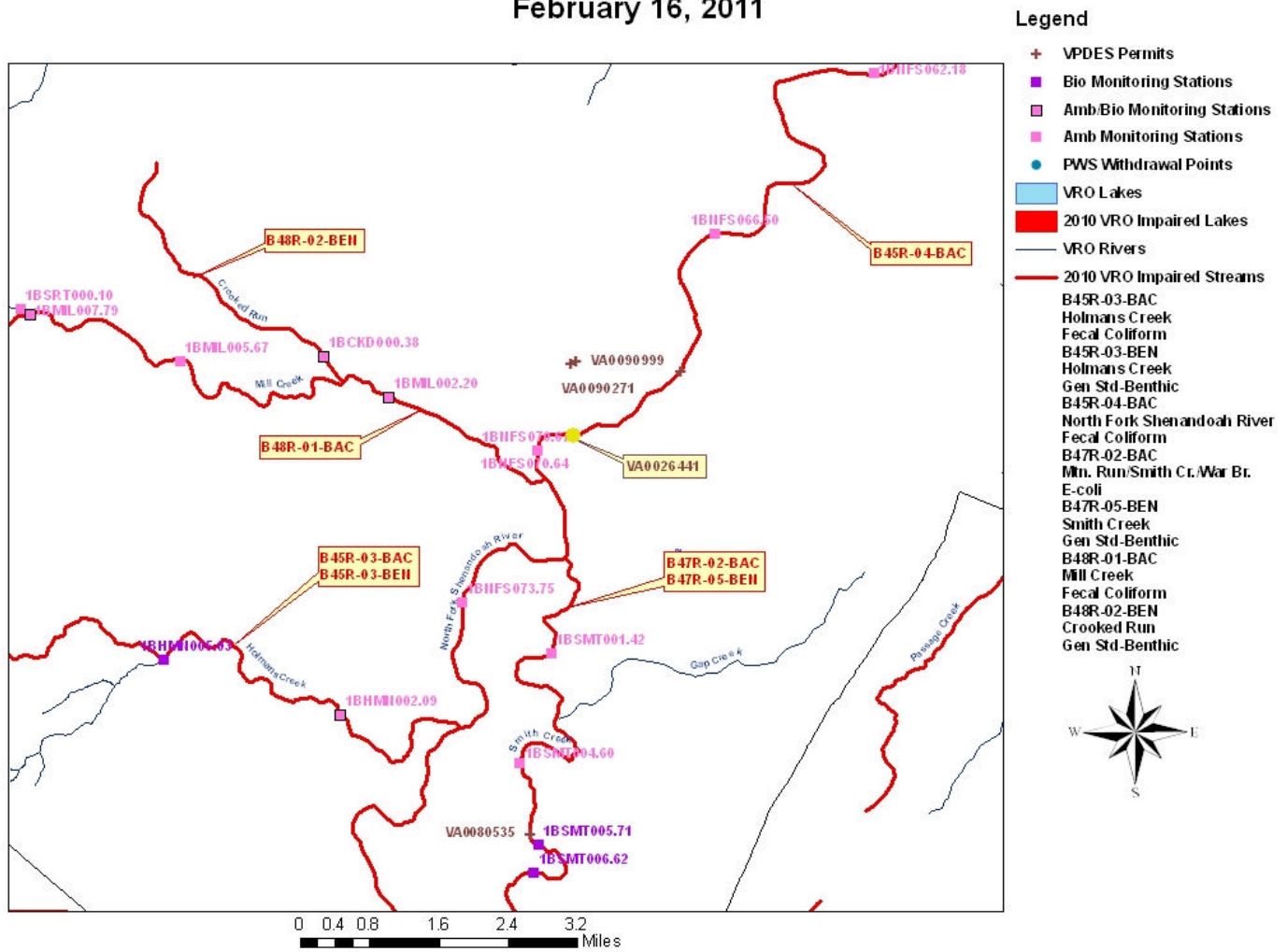
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PLANNING INFORMATION

Relevant points of interest within the watershed and in the vicinity of the discharge are shown on the Water Quality Assessment TMDL Review table and corresponding map below.

WATER QUALITY ASSESSMENTS REVIEW						
POTOMAC-SHENANDOAH RIVER BASIN						
2/16/2011						
IMPAIRED SEGMENTS						
<u>SEGMENT ID</u>	<u>STREAM</u>	<u>SEGMENT START</u>	<u>SEGMENT END</u>	<u>SEGMENT LENGTH</u>	<u>PARAMETER</u>	
B45R-03-BAC	Holmans Creek	10.42	0.00	10.42	Fecal Coliform	
B45R-04-BAC	North Fork Shenandoah River	92.61	60.75	31.86	Fecal Coliform	
B47R-02-BAC	Mountain Run/Smith Creek/War Branch	5.98, 33.83, 6.81	0.00, 0.00, 6.81	5.98, 33.83, 6.81	E-coli	
B48R-01-BAC	Mill Creek	15.00	0.00	15.00	Fecal Coliform	
B48R-02-BEN	Crooked Run	3.89	0.00	3.89	Benthic	
B45R-03-BEN	Holmans Creek	10.42	0.00	10.42	Benthic	
B47R-05-BEN	Smith Creek	25.19	0.00	25.19	Benthic	
PERMITS						
<u>PERMIT</u>	<u>FACILITY</u>	<u>STREAM</u>	<u>RIVER MILE</u>	<u>LAT</u>	<u>LONG</u>	<u>WBID</u>
VA0026441	Mt. Jackson STP	N.F. Shenandoah River	70.04	384455	783753	VAV-B48R
VA0080535	Two Hills Inc. STP	Smith Creek	5.53	384055	783829	VAV-B47R
VA0083054	Bow man Apple Products - Mt Jackson	N.F. Shenandoah River	68.46	384533	783630	VAV-B48R
VA0090999	Little Apple Properties Inc	N.F. Shenandoah River	0.94	384540	783750	VAV-B48R
VA0090271	Sheetz Travel Center # 701	N.F. Shenandoah River	0.00	384538	783754	VAV-B48R
MONITORING STATIONS						
<u>STREAM</u>	<u>NAME</u>	<u>RIVER MILE</u>	<u>RECORD</u>	<u>LAT</u>	<u>LONG</u>	
Holmans Creek	1BHMN005.03	5.03	10/01/96	384242	784309	
Smith Creek	1BSMT005.71	5.71	05/02/91	384049	783822	
Crooked Run	1BCKD000.38	0.38	05/06/05	384544	784104	
Mill Creek	1BMIL007.79	7.79	05/06/05	384611	784450	
Holmans Creek	1BHMN002.09	2.09	07/01/91	384208	784054	
Mill Creek	1BMIL002.20	2.2	07/01/91	384519	784014	
N.F. Shenandoah Riv	1BNFS070.64	70.64	01/14/85	384446	783820	
N.F. Shenandoah Riv	1BNFS066.50	66.5	06/01/98	384656	783602	
N.F. Shenandoah Riv	1BNFS070.67	70.67	04/23/79	384446	783820	
Smith Creek	1BSMT004.60	4.6	04/23/79	384138	783836	
Mill Creek	1BMIL005.67	5.67	05/22/01	384542	784254	
N.F. Shenandoah Riv	1BNFS073.75	73.75	5/11/01	384315	783919	
Straight Run	1BSRT000.10	0.1	5/22/01	384614	784456	
Smith Creek	1BSMT001.42	1.42	7/2001	384244	-783811	
PUBLIC WATER SUPPLY INTAKES						
<u>OWNER</u>	<u>STREAM</u>	<u>RIVER MILE</u>				
None						
WATER QUALITY MANAGEMENT PLANNING REGULATION						
Is this discharge addressed in the WQMP regulation? Yes						
If Yes, what effluent limitations or restrictions does the WQMP regulation impose on this discharge?						
<u>PARAMETER</u>	<u>ALLOCATION</u>					
Nutrients under the Watershed General Permit						
WATERSHED NAME						
VAV-B48R North Fork Shenandoah River/Mill Creek						

**Mt. Jackson STP - Water Quality Assessments Review
February 16, 2011**



Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

FLOW FREQUENCY DETERMINATION

**MEMORANDUM
DEPARTMENT OF ENVIRONMENTAL QUALITY
VALLEY REGIONAL OFFICE**

4411 Early Road – P.O. Box 3000

Harrisonburg, VA 22801

SUBJECT: Flow Frequency Determination
Mt. Jackson STP – VPDES Permit No. VA0026441, Shenandoah County

TO: Permit Processing File

FROM: Keith A. Showman

DATE: February 15, 2011

This memo supersedes my previous flow frequency determination dated July 24, 2006. The subject facility discharges to the North Fork Shenandoah River at Mt. Jackson. Stream flow frequencies are required at this site for use in developing effluent limitations for the VPDES permit reissuance.

The VDEQ has operated a continuous record gage on the North Fork Shenandoah River at Mt. Jackson, VA (#01633000) since 1944. The gage is located approximately 0.5 miles upstream of the discharge point. Based on the proximity of the discharge point to the gage and the limited drainage area between the sites, the stream flow frequencies for the gage and the discharge point are considered to be the same. The flow frequencies are presented below.

North Fork Shenandoah River at Mt. Jackson, VA (#01633000) and at the discharge point:

Drainage Area = 508 mi ²					
1Q30 =	5.6 cfs	(3.62 mgd)	High Flow 1Q10 =	44 cfs	(28.4 mgd)
1Q10 =	11 cfs	(7.11 mgd)	High Flow 7Q10 =	50 cfs	(32.3 mgd)
7Q10 =	14 cfs	(9.05 mgd)	High Flow 30Q10 =	69 cfs	(44.6 mgd)
30Q10 =	20 cfs	(12.9 mgd)	HM =	102 cfs	(65.9 mgd)
30Q5 =	27 cfs	(17.4 mgd)			

The analysis assumes that there are no significant withdrawals, discharges, or springs lying between the gage and the outfall that may influence the flow in the North Fork Shenandoah River at the discharge point.

The high flow months are January through May.

REVIEWER: DMJ

DATE: 2/18/11

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

EFFLUENT/STREAM MIXING EVALUATION

Mixing zone predictions were made with the Virginia DEQ Mixing Zone Analysis Version 2.1 program. The predictions are based on the discharge and receiving stream characteristics, and are presented below.

Annual Mix (June – December)	Wet Season Mix (January – May)
<p>Effluent Flow = 0.70 MGD Stream 7Q10 = 9.05 MGD Stream 30Q10 = 12.9 MGD Stream 1Q10 = 7.11 MGD Stream slope = 0.0015 ft/ft Stream width = 40 ft Bottom scale = 3 Channel scale = 1</p> <p>Mixing Zone Predictions @ 7Q10</p> <p>Depth = .8341 ft Length = 1729.28 ft Velocity = .4524 ft/sec Residence Time = .0442 days</p> <p>Recommendation: A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.</p> <p>Mixing Zone Predictions @ 30Q10</p> <p>Depth = 1.0221 ft Length = 1451.16 ft Velocity = .5149 ft/sec Residence Time = .0326 days</p> <p>Recommendation: A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.</p> <p>Mixing Zone Predictions @ 1Q10</p> <p>Depth = .7287 ft Length = 1942. ft Velocity = .4148 ft/sec Residence Time = 1.3005 hours</p> <p>Recommendation: A complete mix assumption is appropriate for this situation providing no more than 76.89% of the 1Q10 is used.</p>	<p>Effluent Flow = 0.70 MGD Stream 7Q10 = 32.3 MGD Stream 30Q10 = 44.6 MGD Stream 1Q10 = 28.4 MGD Stream slope = 0.0015 ft/ft Stream width = 60 ft Bottom scale = 3 Channel scale = 1</p> <p>Mixing Zone Predictions @ 7Q10</p> <p>Depth = 1.361 ft Length = 2581.37 ft Velocity = .6255 ft/sec Residence Time = .0478 days</p> <p>Recommendation: A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.</p> <p>Mixing Zone Predictions @ 30Q10</p> <p>Depth = 1.6521 ft Length = 2182.79 ft Velocity = .7074 ft/sec Residence Time = .0357 days</p> <p>Recommendation: A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.</p> <p>Mixing Zone Predictions @ 1Q10</p> <p>Depth = 1.2604 ft Length = 2758.02 ft Velocity = .5956 ft/sec Residence Time = 1.2863 hours</p> <p>Recommendation: A complete mix assumption is appropriate for this situation providing no more than 77.74% of the 1Q10 is used.</p>

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

APPENDIX B

EFFLUENT SCREENING AND EFFLUENT LIMITATIONS

EFFLUENT LIMITATIONS

A comparison of technology and water quality-based limits was performed and the most stringent limits were selected, as summarized in the table below.

Outfall 001

Final Limits

Design Flow: 0.70 MGD

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Avg.		Maximum		Frequency	Sample Type
Flow (MGD)	1	NL		NL		Continuous	TIRE
-----	-----	Monthly Avg.		Weekly Avg.		-----	-----
CBOD ₅	3,4	15 mg/L	40 kg/d	22 mg/L	58 kg/d	3/Week	8 HC
TSS	2	30 mg/L	79 kg/d	45 mg/L	120 kg/d	1/Month	8 HC
Effluent Chlorine (TRC)(mg/L)*	3	0.024		0.028		3/Day At 4 hr. intervals	Grab
Ammonia-N (June-December)(mg/L)	3	3.3		4.4		3/Week	8 HC
E. coli (N/100 mL) (geometric mean)	3,5	107		NA		4/Month* 10 a.m. to 4 p.m. or 3/Week** between 10 am to 4 pm at least 48 hours apart	Grab
-----	-----	Annual Average		Maximum		-----	-----
TP – Year to Date (mg/L)	7	NL		NA		1/Month	Calculated
TP – Calendar Year (mg/L)	7,8	0.3		NA		1/Year	Calculated
TN – Year to Date (mg/L)	7	NL		NA		1/Month	Calculated
TN – Calendar Year (mg/L)	7,8	4.0		NA		1/Year	Calculated
-----	-----	Minimum		Maximum		-----	-----
pH (S.U.)	3	6.5		9.5		1/Day	Grab
Dissolved Oxygen (mg/L)	3,4	5.0		NA		1/Day	Grab
Contact Chlorine (TRC)(mg/L)*	3,6	1.0		NA		3/Day at 4 hour intervals	Grab

NL = No Limitation, monitoring required

NA = Not Applicable

TIRE = Totalizing, Indicating, and Recording equipment

3/Week = 3 samples taken during the calendar week, no less than 48 hours apart

8 HC = 8-Hour Composite

4/Month = 4 samples taken weekly during the calendar month

* = Applicable only when chlorination is used for disinfection

** = Applicable if an alternative to chlorination is used for disinfection.

BASIS DESCRIPTIONS

1. VPDES Permit Regulation (9 VAC 25-31)
2. Federal Effluent Requirements (Secondary Treatment Regulation - 40CFR133)
3. Water Quality Standards (9 VAC 25-260)
4. Regional Stream Model(v 4.11) simulation
5. North Fork Shenandoah River Bacteria TMDL
6. Best Professional Judgment (BPJ)
7. GM No. 07-2008, Amendment No. 2, 10/23/07, Permitting Considerations for Facilities in the Chesapeake Bay Watershed
8. Annual average concentration limits are based on the Technology Regulation (9 VAC 25-40)

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

LIMITING FACTORS – OVERVIEW:

The following potential limiting factors have been considered in developing this permit and fact sheet:

Water Quality Management Plan Regulation (WQMP) (9 VAC 25-720)	
A. TMDL limits	E. coli
B. Non-TMDL WLAs	None
C. CBP (TN & TP) WLAs	TN and TP via GP VAN010012
Federal Effluent Guidelines	cBOD₅, TSS, pH
BPJ/Agency Guidance limits	TRC (contact)
Water Quality-based Limits - numeric	cBOD₅, DO, TRC (effluent), E. coli, pH, Ammonia-N
Water Quality-based Limits - narrative	None
Technology-based Limits (9 VAC 25-40-70)	TN, TP
Whole Effluent Toxicity (WET)	See Appendix B
Storm Water Limits	No Exposure Certification

EVALUATION OF THE EFFLUENT – CONVENTIONAL POLLUTANTS:

The discharge from this facility was modeled using the Regional Stream Model (v.4.11). The Mt. Jackson STP was previously included in the 2010 model for Bowman Andros Products, LLC (VA0083054). The only change made to the 2010 model was that the effluent temperature for Mt. Jackson STP was changed from 23 °C to 24 °C. The DO antidegradation baseline of 6.8 mg/L was established in the 2006 permit and has been carried forward at this reissuance. The modeling information is maintained in the DEQ-VRO receiving stream DO model files. The values below were demonstrated to maintain the DO baseline for the North Fork Shenandoah River.

CBOD₅ = 15 mg/L

TKN = 8 mg/L

DO = 5 mg/L

The model was run with a TKN of 8 mg/L for the Mt. Jackson STP. The Mt. Jackson STP is a nutrient removal facility with annual average TN limits. Because it is not expected that the facility will discharge effluent with TKN greater than 8 mg/L, no TKN limits have been included.

The CBOD₅ limits have been carried forward from the previous permit.

The DO limit has been carried forward from the previous permit.

The TSS limits are consistent with the Secondary Treatment Regulation and have been carried forward from the previous permit.

The pH limits reflect the current WQS for pH in the receiving stream and have been carried forward from the previous permit.

EVALUATION OF THE EFFLUENT – DISINFECTION:

Alternate disinfection requirements have been carried forward from the previous permit. If chlorination is utilized, in addition to the minimum TRC contact requirements, E. coli monitoring at a frequency of 4/Month and an associated limit have been included at this reissuance. The E. coli limits are consistent with the TMDL WLA of 1.04×10^{12} cfu/yr and are protective of the current WQS for E. coli in the receiving stream.

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EVALUATION OF THE EFFLUENT – NUTRIENTS:

In accordance with § 62.1-44.19:14.C.5. of the Code of Virginia, this Significant Discharger has submitted a Registration Statement and DEQ has recognized that they are covered under the General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for TN and Total Phosphorus (TP) Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820) (GP). The effective date of coverage is January 1, 2007. Coverage under the GP will expire December 31, 2011. The load limit for TN is 8,528 pounds per calendar year and TP is 640 pounds per calendar year.

The Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed (9 VAC 25-40-70) stipulates the inclusion of technology-based effluent concentration limits in the individual permit for any facility that has installed technology for the control of nitrogen and phosphorous whether by new construction, expansion, or upgrade. Technology based annual average effluent concentration limits of TN = 4.0 mg/L and TP = 0.30 mg/L have been required for the 0.70 MGD flow tier. At these annual average concentrations and design flows, the load limits will be met without the need to offset any nutrient loads.

EVALUATION OF THE EFFLUENT – TOXICS:

WQS-WLA Spreadsheet Data

Stream: Water quality data for the receiving stream were obtained from Ambient Monitoring Station No. 1BNFS070.67 on North Fork Shenandoah River located upstream of the discharge point. A Flow Frequency Determination for the receiving stream was generated February 15, 2011, and is included in Appendix A. The “Wet Season” or “High Flow” months are January through May.

Stream Information			
90% Annual Temp (°C) =	25	90% pH (SU) =	8.6
90% Wet Temp (°C) =	17.6	10% pH (SU) =	7.6
Mean Hardness (mg/L) =	171		

All toxic pollutants, including Ammonia-N and TRC, are assumed absent in the receiving stream because there are no data for these parameters directly above the discharge.

Discharge: The pH, temperature, and hardness values were obtained from data submitted by the permittee.

Effluent Information			
90% Annual Temp (°C) =	24	90% pH (SU) =	8.1
90% Wet Temp (°C) =	21	10% pH (SU) =	7.5
Mean Hardness (mg/L) =	450		

WQC and WLAs were calculated for the WQS parameters for which data are available. The resulting WQC and WLAs are presented in this appendix. Current agency guidelines recommends the evaluation of toxic pollutant limits for TRC and Ammonia-N be based on default effluent concentrations of 20 mg/L and 9 mg/L, respectively. The effluent data were analyzed per the protocol for evaluation of effluent toxic pollutants included in this appendix with the following results:

- TRC: More stringent limits were determined to be necessary. This change is due to an increase in the monitoring frequency from 1/Day to 3/Day, as specified by current DEQ Guidance. Because Mt. Jackson STP utilizes UV disinfection, a schedule of compliance for meeting the more stringent limits has not been provided.
- Ammonia-N: More stringent Ammonia-N limits have been determined to be necessary. This change is due to an increased effluent 90th percentile pH and an increased effluent 90th percentile temperature. Based on the facility's Ammonia-N effluent data combined with the fact that it is now designed to meet an annual average TN limit of 4.0 mg/L, a schedule of compliance for meeting the more stringent limits has not been provided.

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WQC-WLA SPREADSHEET INPUT –

WATER QUALITY CRITERIA / WASTE LOAD ALLOCATION ANALYSIS					
Facility Name:		Permit No.:		Version: OWP Guidance Memo 00-2011 (8/24/00)	
Mt. Jackson STP		VA0026441			
Receiving Stream:		Date:			
North Fork Shenandoah River		9/15/2011			
Stream Information		Stream Flows		Effluent Information	
Mean Hardness (as CaCO3) =		1Q10 (Annual) =		Mean Hardness (as CaCO3) =	
171 mg/L		7.11 MGD		450 mg/L	
90% Temperature (Annual) =		7Q10 (Annual) =		90% Temp (Annual) =	
25 deg C		9.05 MGD		24 deg C	
90% Temperature (Wet season) =		30Q10 (Annual) =		90% Temp (Wet season) =	
17.6 deg C		12.9 MGD		21 deg C	
90% Maximum pH =		1Q10 (Wet season) =		90% Maximum pH =	
8.6 SU		28.4 MGD		8.1 SU	
10% Maximum pH =		30Q10 (Wet season) =		10% Maximum pH =	
7.6 SU		44.6 MGD		7.5 SU	
Tier Designation =		30Q5 =		1992 Discharge Flow =	
2		17.4 MGD		0.200 MGD	
Public Water Supply (PWS) Y/N? =		Harmonic Mean =		Discharge Flow for Limit Analysis =	
N		65.9 MGD		0.700 MGD	
V(alley) or P(iedmont)? =					
V					
Trout Present Y/N? =					
N					
Early Life Stages Present Y/N? =					
Y					
Footnotes:					
1. All concentrations expressed as micrograms/ liter (ug/l), unless noted otherwise.					
2. All flow values are expressed as Million Gallons per Day (MGD).					
3. Discharge volumes are highest monthly average or 2C maximum for Industries and design flows for Municipals.					
4. Hardness expressed as mg/ l CaCO3. Standards calculated using Hardness values in the range of 25-400 mg/ l CaCO3.					
5. "Public Water Supply" protects for fish & water consumption. "Other Surface Waters" protects for fish consumption only.					
6. Carcinogen "Y" indicates carcinogenic parameter.					
7. Ammonia WQsS selected from separate tables, based on pH and temperature.					
8. Metals measured as Dissolved, unless specified otherwise.					
9. WLA = Waste Load Allocation (based on standards).					
10. WLA = Waste Load Allocation (based on standards).					
11. WLAs are based on mass balances (less background, if data exist).					
12. Acute - 1 hour avg. concentration not to be exceeded more than 1/3 years.					
13. Chronic - 4 day avg. concentration (30 day avg. for Ammonia) not to be exceeded more than 1/3 years.					
14. Mass balances employ 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, and Harmonic Mean for Carcinogens. Actual flows employed are a function of the mixing analysis and may be less than the actual flows.					
15. Effluent Limitations are calculated elsewhere using the minimum WLA and EPA's statistical approach (Technical Support Document).					

WQC-WLA SPREADSHEET OUTPUT

Facility Name: Mt. Jackson STP Receiving Stream: North Fork Shenandoah River		Permit No.: VA0026441 Date: 9/15/2011		PRE - EXPANSION WATER QUALITY CRITERIA 0.200 MGD Discharge Flow - 100%Stream Mix											
Toxic Parameter and Form	Carcinogen?	97th Percentiles of Effluent Concentrations			Expected Value of Upstream Data	Current Downstream Mix Concentrations			Aquatic Protection		Human Health		INSTREAM BASELINES		
		Daily	4-Day	30-Day		Acute	Chronic	H-Health	Acute	Chronic	Supplies	Waters	Acute	Chronic	H-Health
Aceaphthene	N	0	0	0	0	0	0	0	None	None	6.7E+02	9.9E+02	None	None	9.9E+01
Acrolein	N	0	0	0	0	0	0	0	None	None	6.1E+00	9.3E+00	None	None	9.3E-01
Acrylonitrile	Y	0	0	0	0	0	0	0	None	None	5.1E-01	2.5E+00	None	None	2.5E-01
Aldrin	Y	0	0	0	0	0	0	0	3.0E+00	None	4.9E-04	5.0E-04	7.5E-01	None	5.0E-05
Ammonia-N (Annual)	N	5.6	0	2.8	0	0.15	0.04	0.03	2.8E+02 mg/L	4.8E-01 mg/L	None	None	8.1E-01 mg/L	1.5E-01 mg/L	None
Ammonia-N (Wet Season)	N	5.6	0	2.8	0	0.04	0.01	0.03	2.7E+00 mg/L	7.6E-01 mg/L	None	None	7.0E-01 mg/L	2.0E-01 mg/L	None
Anthracene	N	0	0	0	0	0	0	0	None	None	8.3E+03	4.0E+04	None	None	4.0E+03
Antimony	N	0	0	0	0	0	0	0	None	None	5.6E+00	6.4E+02	None	None	6.4E+01
Arsenic	N	0	0	0	0	0	0	0	3.4E+02	1.5E+02	1.0E+01	None	8.5E+01	3.8E+01	None
Barium	N	0	0	0	0	0	0	0	None	None	2.0E+03	None	None	None	None
Benzene	Y	0	0	0	0	0	0	0	None	None	2.2E+01	5.1E+02	None	None	5.1E+01
Benzidine	Y	0	0	0	0	0	0	0	None	None	8.6E-04	2.0E-03	None	None	2.0E-04
Benzo(a)anthracene	Y	0	0	0	0	0	0	0	None	None	3.8E-02	1.8E-01	None	None	1.8E-02
Benzo(a)pyrene	Y	0	0	0	0	0	0	0	None	None	3.8E-02	1.8E-01	None	None	1.8E-02
Benzo(b)fluoranthene	Y	0	0	0	0	0	0	0	None	None	3.8E-02	1.8E-01	None	None	1.8E-02
Benzo(k)fluoranthene	Y	0	0	0	0	0	0	0	None	None	3.8E-02	1.8E-01	None	None	1.8E-02
Bis(2-Chloroethyl) Ether	N	0	0	0	0	0	0	0	None	None	3.0E+01	5.3E+00	None	None	5.3E-01
Bis(2-Chloroisopropyl) Ether	N	0	0	0	0	0	0	0	None	None	1.4E+03	6.5E+04	None	None	6.5E+03
Bis(2-Ethylhexyl) Phthalate	Y	0	0	0	0	0	0	0	None	None	1.2E+01	2.2E+01	None	None	2.2E+00
Bromofom	Y	0	0	0	0	0	0	0	None	None	4.3E+01	1.4E+03	None	None	1.4E+02
Butyl Benzyl Phthalate	N	0	0	0	0	0	0	0	None	None	1.5E+03	1.9E+03	None	None	1.9E+02
Cadmium	N	0	0	0	0	0	0	0	7.5E+00	1.8E+00	5.0E+00	None	1.9E+00	4.4E-01	None
Carbon Tetrachloride	Y	0	0	0	0	0	0	0	None	None	2.3E+00	1.6E+01	None	None	1.6E+00
Chlordane	Y	0	0	0	0	0	0	0	2.4E+00	4.3E-03	8.0E-03	8.1E-03	6.0E-01	1.1E-03	8.1E-04
Chloride	N	0	465	337	0	19	10	4	8.6E+02 mg/L	2.3E+02 mg/L	2.5E+02 mg/L	None	2.3E+02 mg/L	6.5E+01 mg/L	None
Chlorine, Total Residual	N	0.0010	0.00069	0.00050	0	0.000027	0.000015	0.000006	1.9E-02 mg/L	1.1E-02 mg/L	None	None	4.8E-03 mg/L	2.8E-03 mg/L	None
Chlorobenzene	N	0	0	0	0	0	0	0	None	None	1.3E+02	1.6E+03	None	None	1.6E+02
Chlorodibromomethane	Y	0	0	0	0	0	0	0	None	None	4.0E+00	1.3E+02	None	None	1.3E+01
Chloroform	N	0	0	0	0	0	0	0	None	None	3.4E+02	1.1E+04	None	None	1.1E+03
2-Chloronaphthalene	N	0	0	0	0	0	0	0	None	None	1.0E+03	1.6E+03	None	None	1.6E+02
2-Chlorophenol	N	0	0	0	0	0	0	0	None	None	8.1E+01	1.5E+02	None	None	1.5E+01
Chlorpyrifos	N	0	0	0	0	0	0	0	8.3E-02	4.1E-02	None	None	2.1E-02	1.0E-02	None
Chromium (+3)	N	0	0	0	0	0	0	0	9.2E+02	1.2E+02	None	None	2.3E+02	3.0E+01	None
Chromium (+6)	N	0	0	0	0	0	0	0	1.6E+01	1.1E+01	None	None	4.0E+00	2.8E+00	None
Total Chromium	N	0	0	0	0	0	0	0	None	None	1.0E+02	None	None	None	None
Chrysene	Y	0	0	0	0	0	0	0	None	None	3.8E-03	1.8E-02	None	None	1.8E-03
Copper	N	0	0	0	0	0	0	0	2.3E+01	1.5E+01	1.3E+03	None	5.8E+00	3.6E+00	None
Cyanide, Free	N	0	0	0	0	0	0	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	5.5E+00	1.3E+00	1.6E+03
DDD	Y	0	0	0	0	0	0	0	None	None	3.1E-03	3.1E-03	None	None	3.1E-04
DDE	Y	0	0	0	0	0	0	0	None	None	2.2E-03	2.2E-03	None	None	2.2E-04
DDT	Y	0	0	0	0	0	0	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	2.6E-01	2.5E-04	2.2E-04
Demeton	N	0	0	0	0	0	0	0	None	1.0E-01	None	None	None	2.5E-02	None
Diazinon	N	0	0	0	0	0	0	0	1.7E-01	1.7E-01	None	None	4.3E-02	4.3E-02	None
Dibenz(a,h)anthracene	Y	0	0	0	0	0	0	0	None	None	3.8E-02	1.8E-01	None	None	1.8E-02
1,2-Dichlorobenzene	N	0	0	0	0	0	0	0	None	None	4.2E+02	1.3E+03	None	None	1.3E+02
1,3-Dichlorobenzene	N	0	0	0	0	0	0	0	None	None	3.2E+02	9.6E+02	None	None	9.6E+01
1,4-Dichlorobenzene	N	0	0	0	0	0	0	0	None	None	6.3E+01	1.9E+02	None	None	1.9E+01
3,3-Dichlorobenzidine	Y	0	0	0	0	0	0	0	None	None	2.1E-01	2.8E-01	None	None	2.8E-02
Dichlorobromomethane	Y	0	0	0	0	0	0	0	None	None	5.5E+00	1.7E+02	None	None	1.7E+01

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

Facility Name: Mt. Jackson STP Receiving Stream: North Fork Shenandoah River		Permit No.: VA0026441 Date: 9/15/2011		PRE - EXPANSION WATER QUALITY CRITERIA 0.200 MGD Discharge Flow - 100% Stream Mix														
Toxic Parameter and Form	Carcinogen?	97th Percentiles of Effluent Concentrations			Expected Value of Upstream Data	Current Downstream Mix Concentrations			Aquatic Protection		Human Health		INSTREAM BASELINES					
		Daily	4-Day	30-Day		Acute	Chronic	H-Health	Acute	Chronic	Public Water	Other Surface	Acute	Chronic	H-Health			
											Supplies	Waters						
1,2-Dichloroethane	Y	0	0	0	0	0	0	0	None	None	3.8E+00	3.7E+02	None	None	None	3.7E+01		
1,1-Dichloroethylene	N	0	0	0	0	0	0	0	None	None	3.3E+02	7.1E+03	None	None	None	7.1E+02		
1,2-trans-dichloroethylene	N	0	0	0	0	0	0	0	None	None	1.4E+02	1.0E+04	None	None	None	1.0E+03		
2,4-Dichlorophenol	N	0	0	0	0	0	0	0	None	None	7.7E+01	2.9E+02	None	None	None	2.9E+01		
2,4-Dichlorophenoxy Acetic Acid	N	0	0	0	0	0	0	0	None	None	1.0E+02	None	None	None	None	None		
1,2-Dichloropropane	Y	0	0	0	0	0	0	0	None	None	5.0E+00	1.5E+02	None	None	None	1.5E+01		
1,3-Dichloropropane	Y	0	0	0	0	0	0	0	None	None	3.4E+00	2.1E+02	None	None	None	2.1E+01		
Dieldrin	Y	0	0	0	0	0	0	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	6.0E-02	1.4E-02	None	5.4E-05		
Diethyl Phthalate	N	0	0	0	0	0	0	0	None	None	1.7E+04	4.4E+04	None	None	None	4.4E+03		
2,4 Dimethylphenol	N	0	0	0	0	0	0	0	None	None	3.8E+02	8.5E+02	None	None	None	8.5E+01		
Dimethyl Phthalate	N	0	0	0	0	0	0	0	None	None	2.7E+05	1.1E+06	None	None	None	1.1E+05		
Di-n-Butyl Phthalate	N	0	0	0	0	0	0	0	None	None	2.0E+03	4.5E+03	None	None	None	4.5E+02		
2,4 Dinitrophenol	N	0	0	0	0	0	0	0	None	None	6.9E+01	5.3E+03	None	None	None	5.3E+02		
2-Methyl-4,6-Dinitrophenol	N	0	0	0	0	0	0	0	None	None	1.3E+01	2.8E+02	None	None	None	2.8E+01		
2,4-Dinitrotoluene	Y	0	0	0	0	0	0	0	None	None	1.1E+00	3.4E+01	None	None	None	3.4E+00		
Dioxin +	N	0	0	0	0	0	0	0	None	None	5.0E-08	5.1E-08	None	None	None	5.1E-09		
1,2-Diphenylhydrazine	Y	0	0	0	0	0	0	0	None	None	3.6E-01	2.0E+00	None	None	None	2.0E-01		
Alpha-Endosulfan	N	0	0	0	0	0	0	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	5.5E-02	1.4E-02	None	8.9E+00		
Beta-Endosulfan	N	0	0	0	0	0	0	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	5.5E-02	1.4E-02	None	8.9E+00		
Alpha+Beta-Endosulfan	N	0	0	0	0	0	0	0	2.2E-01	5.6E-02	None	None	5.5E-02	1.4E-02	None	None		
Endosulfan Sulfate	N	0	0	0	0	0	0	0	None	None	6.2E+01	8.9E+01	None	None	None	8.9E+00		
Endrin	N	0	0	0	0	0	0	0	8.6E-02	3.6E-02	5.9E-02	6.0E-02	2.2E-02	9.0E-03	None	6.0E-03		
Endrin Aldehyde	N	0	0	0	0	0	0	0	None	None	2.9E-01	3.0E-01	None	None	None	3.0E-02		
Ethylbenzene	N	0	0	0	0	0	0	0	None	None	5.3E+02	2.1E+03	None	None	None	2.1E+02		
Fluoranthene	N	0	0	0	0	0	0	0	None	None	1.3E+02	1.4E+02	None	None	None	1.4E+01		
Fluorene	N	0	0	0	0	0	0	0	None	None	1.1E+03	5.3E+03	None	None	None	5.3E+02		
Foaming Agents (MBAS)	N	0	0	0	0	0	0	0	None	None	5.0E+02	None	None	None	None	None		
Guthion	N	0	0	0	0	0	0	0	None	1.0E-02	None	None	None	2.5E-03	None	None		
Heptachlor	Y	0	0	0	0	0	0	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	1.3E-01	9.5E-04	None	7.9E-05		
Heptachlor Epoxide	Y	0	0	0	0	0	0	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	1.3E-01	9.5E-04	None	3.9E-05		
Hexachlorobenzene	Y	0	0	0	0	0	0	0	None	None	2.8E-03	2.9E-03	None	None	None	2.9E-04		
Hexachlorobutadiene	Y	0	0	0	0	0	0	0	None	None	4.4E+00	1.8E+02	None	None	None	1.8E+01		
Hexachlorocyclohexane Alpha-BHC	Y	0	0	0	0	0	0	0	None	None	2.6E-02	4.9E-02	None	None	None	4.9E-03		
Hexachlorocyclohexane Beta-BHC	Y	0	0	0	0	0	0	0	None	None	9.1E-02	1.7E-01	None	None	None	1.7E-02		
Hexachlorocyclohexane Gamma-BHC (Lindane)	Y	0	0	0	0	0	0	0	9.5E-01	None	9.8E-01	1.8E+00	2.4E-01	None	None	1.8E-01		
Hexachlorocyclopentadiene	N	0	0	0	0	0	0	0	None	None	4.0E+01	1.1E+03	None	None	None	1.1E+02		
Hexachloroethane	Y	0	0	0	0	0	0	0	None	None	1.4E+01	3.3E+01	None	None	None	3.3E+00		
Hydrogen Sulfide	N	0	0	0	0	0	0	0	None	2.0E+00	None	None	None	5.0E-01	None	None		
Indeno(1,2,3-cd)pyrene	Y	0	0	0	0	0	0	0	None	None	3.8E-02	1.8E-01	None	None	None	1.8E-02		
Iron	N	0	0	0	0	0	0	0	None	None	3.0E+02	None	None	None	None	None		
Isophorone	Y	0	0	0	0	0	0	0	None	None	3.5E+02	9.6E+03	None	None	None	9.6E+02		
Kepon	N	0	0	0	0	0	0	0	None	Zero	None	None	None	None	Zero	None		
Lead	N	0	0	0	0	0	0	0	2.5E+02	2.8E+01	1.5E+01	None	6.2E+01	7.0E+00	None	None		
Malathion	N	0	0	0	0	0	0	0	None	1.0E-01	None	None	None	None	2.5E-02	None		
Manganese	N	0	0	0	0	0	0	0	None	None	5.0E+01	None	None	None	None	None		
Mercury	N	0	0	0	0	0	0	0	1.4E+00	7.7E-01	None	None	3.5E-01	1.9E-01	None	None		
Methyl Bromide	N	0	0	0	0	0	0	0	None	None	4.7E+01	1.5E+03	None	None	None	1.5E+02		
Methylene Chloride	Y	0	0	0	0	0	0	0	None	None	4.6E+01	5.9E+03	None	None	None	5.9E+02		
Methoxychlor	N	0	0	0	0	0	0	0	None	3.0E-02	1.0E+02	None	None	7.5E-03	None	None		
Mirex	N	0	0	0	0	0	0	0	None	Zero	None	None	None	Zero	None	None		
Nickel	N	0	0	0	0	0	0	0	3.0E+02	3.3E+01	6.1E+02	4.6E+03	7.4E+01	8.2E+00	4.6E+02	None		
Nitrate (as N)	N	0	0	0	0	0	0	0	None	None	1.0E+01 mg/L	None	None	None	None	None		
Nitrobenzene	N	0	0	0	0	0	0	0	None	None	1.7E+01	6.9E+02	None	None	None	6.9E+01		
N-Nitrosodimethylamine	Y	0	0	0	0	0	0	0	None	None	6.9E-03	3.0E+01	None	None	None	3.0E+00		
N-Nitrosodiphenylamine	Y	0	0	0	0	0	0	0	None	None	3.3E+01	6.0E+01	None	None	None	6.0E+00		
N-Nitrosodi-n-propylamine	Y	0	0	0	0	0	0	0	None	None	5.0E-02	5.1E+00	None	None	None	5.1E-01		
Nonylphenol	N	0	0	0	0	0	0	0	2.8E+01	6.6E+00	None	None	7.0E+00	1.7E+00	None	None		
Parathion	N	0	0	0	0	0	0	0	6.5E-02	1.3E-02	None	None	1.6E-02	3.3E-03	None	None		
PCB Total	Y	0	0	0	0	0	0	0	None	1.4E-02	6.4E-04	6.4E-04	None	3.5E-03	6.4E-05	None		
Pentachlorophenol	Y	0	0	0	0	0	0	0	1.6E+01	1.2E+01	2.7E+00	3.0E+01	4.0E+00	3.1E+00	None	3.0E+00		
Phenol	N	0	0	0	0	0	0	0	None	None	1.0E+04	8.6E+05	None	None	None	8.6E+04		
Pyrene	N	0	0	0	0	0	0	0	None	None	8.3E+02	4.0E+03	None	None	None	4.0E+02		
RadNuc - Beta Part & Photon Act	N	0	0	0	0	0	0	0	None	None	4.0E+00 mrem	None	None	None	None	None		
RadNuc - Gross Alpha Part Act	N	0	0	0	0	0	0	0	None	None	1.5E+01 pCi/L	None	None	None	None	None		
RadNuc - Radium 226 + 228	N	0	0	0	0	0	0	0	None	None	5.0E+00 pCi/L	None	None	None	None	None		
RadNuc - Uranium	N	0	0	0	0	0	0	0	None	None	3.0E+01	None	None	None	None	None		
Selenium, Total Recoverable	N	0	0	0	0	0	0	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	5.0E+00	1.3E+00	4.2E+02	None		
Silver	N	0	0	0	0	0	0	0	9.4E+00	None	None	None	2.3E+00	None	None	None		
Sulfate	N	0	0	0	0	0	0	0	None	None	2.5E+02 mg/L	None	None	None	None	None		
1,1,2,2-Tetrachloroethane	Y	0	0	0	0	0	0	0	None	None	1.7E+00	4.0E+01	None	None	None	4.0E+00		
Tetrachloroethylene	Y	0	0	0	0	0	0	0	None	None	6.9E+00	3.3E+01	None	None	None	3.3E+00		
Thallium	N	0	0	0	0	0	0	0	None	None	2.4E-01	4.7E-01	None	None	None	4.7E-02		
Toluene	N	0	0	0	0	0	0	0	None	None	5.1E+02	6.0E+03	None	None	None	6.0E+02		
Total Dissolved Solids	N	0	0	0	0	0	0	0	None	None	5.0E+05	None	None	None	None	None		
Toxaphene	Y	0	0	0	0	0	0	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	1.8E-01	5.0E-05	2.8E-04	None		
Tributyltin	N	0	0	0	0	0	0	0	4.6E-01	7.2E-02	None	None	1.2E-01	1.8E-02	None	None		
1,2,4-Trichlorobenzene	N	0	0	0	0	0	0	0	None	None	3.5E+01	7.0E+01	None	None	None	7.0E+00		
1,1,2-Trichloroethane	Y	0	0	0	0	0	0	0	None	None	5.9E+00	1.6E+02	None	None	None	1.6E+01		
Trichloroethylene	Y	0	0	0	0	0	0	0	None	None	2.5E+01	3.0E+02	None	None	None	3.0E+01		
2,4,6-Trichlorophenol	Y	0	0	0	0	0	0	0	None	None	1.4E+01	2.4E+01	None	None	None	2.4E+00		
2-(2,4,5-Trichlorophenoxychlor																		

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

Facility Name: Mt. Jackson STP <u>Receiving Stream:</u> North Fork Shenandoah River	ANTIDEGRADATION			POST - EXPANSION WATER QUALITY CRITERIA						MOST RESTRICTIVE		
	WASTE LOAD ALLOCATIONS			0.700 MGD Discharge Flow - Mix per "Mixer"						WASTE LOAD ALLOCATIONS		
	0.700 MGD Discharge - 100% Stream Mix			Human Health						0.700 MGD Discharge Flow		
	Aquatic Protection		Human	Aquatic Protection		Public Water	Other Surface	Aquatic Protection		Human	Aquatic Protection	
Toxic Parameter and Form	Acute	Chronic	Health	Acute	Chronic	Supplies	Waters	Acute	Chronic	Health	Acute	Chronic
Acenaphthene	N/A	N/A	2.6E+03	None	None	6.7E+02	9.9E+02	N/A	N/A	2.6E+03	N/A	N/A
Acrolein	N/A	N/A	2.4E+01	None	None	6.1E+00	9.3E+00	N/A	N/A	2.4E+01	N/A	N/A
Acrylonitrile	N/A	N/A	2.4E+01	None	None	5.1E-01	2.5E+00	N/A	N/A	2.4E+01	N/A	N/A
Aldrin	8.4E+00	N/A	4.8E-03	3.0E+00	None	4.9E-04	5.0E-04	8.4E+00	N/A	4.8E-03	8.4E+00	N/A
Ammonia-N (Annual)	9.0E+00 mg/L	3.0E+00 mg/L	N/A	3.2E+00 mg/L	5.1E-01 mg/L	None	None	9.0E+00 mg/L	3.0E+00 mg/L	N/A	9.0E+00 mg/L	3.0E+00 mg/L
Ammonia-N (Wet Season)	2.9E+01 mg/L	1.3E+01 mg/L	N/A	2.8E+00 mg/L	7.7E-01 mg/L	None	None	2.9E+01 mg/L	1.3E+01 mg/L	N/A	2.9E+01 mg/L	1.3E+01 mg/L
Anthracene	N/A	N/A	1.0E+05	None	None	8.3E+03	4.0E+04	N/A	N/A	1.0E+05	N/A	N/A
Antimony	N/A	N/A	1.7E+03	None	None	5.6E+00	6.4E+02	N/A	N/A	1.7E+03	N/A	N/A
Arsenic	9.5E+02	5.2E+02	N/A	3.4E+02	1.5E+02	1.0E+01	None	9.5E+02	5.2E+02	N/A	9.5E+02	5.2E+02
Barium	N/A	N/A	N/A	None	None	2.0E+03	None	N/A	N/A	N/A	N/A	N/A
Benzene	N/A	N/A	4.9E+03	None	None	2.2E+01	5.1E+02	N/A	N/A	4.9E+03	N/A	N/A
Benzidine	N/A	N/A	1.9E-02	None	None	8.6E-04	2.0E-03	N/A	N/A	1.9E-02	N/A	N/A
Benzo(a)anthracene	N/A	N/A	1.7E+00	None	None	3.8E-02	1.8E-01	N/A	N/A	1.7E+00	N/A	N/A
Benzo(a)pyrene	N/A	N/A	1.7E+00	None	None	3.8E-02	1.8E-01	N/A	N/A	1.7E+00	N/A	N/A
Benzo(b)fluoranthene	N/A	N/A	1.7E+00	None	None	3.8E-02	1.8E-01	N/A	N/A	1.7E+00	N/A	N/A
Benzo(k)fluoranthene	N/A	N/A	1.7E+00	None	None	3.8E-02	1.8E-01	N/A	N/A	1.7E+00	N/A	N/A
Bis(2-Chloroethyl) Ether	N/A	N/A	5.0E+01	None	None	3.0E-01	5.3E+00	N/A	N/A	5.0E+01	N/A	N/A
Bis(2-Chloroisopropyl) Ether	N/A	N/A	1.7E+05	None	None	1.4E+03	6.5E+04	N/A	N/A	1.7E+05	N/A	N/A
Bis(2-Ethylexyl) Phthalate	N/A	N/A	2.1E+02	None	None	1.2E+01	2.2E+01	N/A	N/A	2.1E+02	N/A	N/A
Bromofom	N/A	N/A	1.3E+04	None	None	4.3E+01	1.4E+03	N/A	N/A	1.3E+04	N/A	N/A
Butyl Benzyl Phthalate	N/A	N/A	4.9E+03	None	None	1.5E+03	1.9E+03	N/A	N/A	4.9E+03	N/A	N/A
Cadmium	2.1E+01	6.2E+00	N/A	8.7E+00	1.9E+00	5.0E+00	None	2.1E+01	6.2E+00	N/A	2.1E+01	6.2E+00
Carbon Tetrachloride	N/A	N/A	1.5E+02	None	None	2.3E+00	1.6E+01	N/A	N/A	1.5E+02	N/A	N/A
Chlordane	6.7E+00	1.5E-02	7.7E-02	2.4E+00	4.3E-03	8.0E-03	8.1E-03	6.7E+00	1.5E-02	7.7E-02	6.7E+00	1.5E-02
Chloride	2.6E+03 mg/L	9.1E+02 mg/L	N/A	8.6E+02 mg/L	2.3E+02 mg/L	2.5E+02 mg/L	None	2.6E+03 mg/L	9.1E+02 mg/L	N/A	2.6E+03 mg/L	9.1E+02 mg/L
Chlorine, Total Residual	5.3E-02 mg/L	3.8E-02 mg/L	N/A	1.9E-02 mg/L	1.1E-02 mg/L	None	None	5.3E-02 mg/L	3.8E-02 mg/L	N/A	5.3E-02 mg/L	3.8E-02 mg/L
Chlorobenzene	N/A	N/A	4.1E+03	None	None	1.3E+02	1.6E+03	N/A	N/A	4.1E+03	N/A	N/A
Chlorodibromomethane	N/A	N/A	1.2E+03	None	None	4.0E+00	1.3E+02	N/A	N/A	1.2E+03	N/A	N/A
Chlorofom	N/A	N/A	2.8E+04	None	None	3.4E+02	1.1E+04	N/A	N/A	2.8E+04	N/A	N/A
2-Chloronaphthalene	N/A	N/A	4.1E+03	None	None	1.0E+03	1.6E+03	N/A	N/A	4.1E+03	N/A	N/A
2-Chlorophenol	N/A	N/A	3.9E+02	None	None	8.1E+01	1.5E+02	N/A	N/A	3.9E+02	N/A	N/A
Chlorpyrifos	2.3E-01	1.4E-01	N/A	8.3E-02	4.1E-02	None	None	2.3E-01	1.4E-01	N/A	2.3E-01	1.4E-01
Chromium (+3)	2.6E+03	4.1E+02	N/A	1.0E+03	1.3E+02	None	None	2.6E+03	4.1E+02	N/A	2.6E+03	4.1E+02
Chromium (+6)	4.5E+01	3.8E+01	N/A	1.6E+01	1.1E+01	None	None	4.5E+01	3.8E+01	N/A	4.5E+01	3.8E+01
Total Chromium	N/A	N/A	N/A	None	None	1.0E+02	None	N/A	N/A	N/A	N/A	N/A
Chrysene	N/A	N/A	1.7E-01	None	None	4.4E-02	4.9E-01	N/A	N/A	1.7E-01	N/A	N/A
Copper	6.5E+01	5.1E+01	N/A	2.6E+01	1.6E+01	1.3E+03	None	6.5E+01	5.1E+01	N/A	6.5E+01	5.1E+01
Cyanide, Free	6.1E+01	1.8E+01	4.1E+04	2.2E+01	5.2E+00	1.4E+02	1.6E+04	6.1E+01	1.8E+01	4.1E+04	6.1E+01	1.8E+01
DDD	N/A	N/A	2.9E-02	None	None	3.1E-03	3.1E-03	N/A	N/A	2.9E-02	N/A	N/A
DDE	N/A	N/A	2.1E-02	None	None	2.2E-03	2.2E-03	N/A	N/A	2.1E-02	N/A	N/A
DDT	3.1E+00	3.5E-03	2.1E-02	1.1E+00	1.0E-03	2.2E-03	2.2E-03	3.1E+00	3.5E-03	2.1E-02	3.1E+00	3.5E-03
Demeton	N/A	3.5E-01	N/A	None	1.0E-01	None	None	N/A	3.5E-01	N/A	N/A	3.5E-01
Diazinon	4.7E-01	5.9E-01	N/A	1.7E-01	1.7E-01	None	None	4.7E-01	5.9E-01	N/A	4.7E-01	5.9E-01
Dibenz(a,h)anthracene	N/A	N/A	1.7E+00	None	None	3.8E-02	1.8E-01	N/A	N/A	1.7E+00	N/A	N/A
1,2-Dichlorobenzene	N/A	N/A	3.4E+03	None	None	4.2E+02	1.3E+03	N/A	N/A	3.4E+03	N/A	N/A
1,3-Dichlorobenzene	N/A	N/A	2.5E+03	None	None	3.2E+02	9.6E+02	N/A	N/A	2.5E+03	N/A	N/A
1,4-Dichlorobenzene	N/A	N/A	4.9E+02	None	None	6.3E+01	1.9E+02	N/A	N/A	4.9E+02	N/A	N/A
3,3-Dichlorobenzidine	N/A	N/A	2.7E+00	None	None	2.1E-01	2.8E-01	N/A	N/A	2.7E+00	N/A	N/A
Dichlorobromomethane	N/A	N/A	1.6E+03	None	None	5.5E+00	1.7E+02	N/A	N/A	1.6E+03	N/A	N/A
1,2-Dichloroethane	N/A	N/A	3.5E+03	None	None	3.8E+00	3.7E+02	N/A	N/A	3.5E+03	N/A	N/A
1,1-Dichloroethylene	N/A	N/A	1.8E+04	None	None	3.3E+02	7.1E+03	N/A	N/A	1.8E+04	N/A	N/A
1,2-trans-dichloroethylene	N/A	N/A	2.6E+04	None	None	1.4E+02	1.0E+04	N/A	N/A	2.6E+04	N/A	N/A
2,4-Dichlorophenol	N/A	N/A	7.5E+02	None	None	7.7E+01	2.9E+02	N/A	N/A	7.5E+02	N/A	N/A
2,4-Dichlorophenoxy Acetic Acid	N/A	N/A	N/A	None	None	1.0E+02	None	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	N/A	N/A	1.4E+03	None	None	5.0E+00	1.5E+02	N/A	N/A	1.4E+03	N/A	N/A
1,3-Dichloropropene	N/A	N/A	2.0E+03	None	None	3.4E+00	2.1E+02	N/A	N/A	2.0E+03	N/A	N/A
Dieldrin	6.7E-01	2.0E-01	5.1E-03	2.4E-01	5.6E-02	5.2E-04	5.4E-04	6.7E-01	2.0E-01	5.1E-03	6.7E-01	2.0E-01
Diethyl Phthalate	N/A	N/A	1.1E+05	None	None	1.7E+04	4.4E+04	N/A	N/A	1.1E+05	N/A	N/A
2,4 Dimethylphenol	N/A	N/A	2.2E+03	None	None	3.8E+02	8.5E+02	N/A	N/A	2.2E+03	N/A	N/A
Dimethyl Phthalate	N/A	N/A	2.8E+06	None	None	2.7E+05	1.1E+06	N/A	N/A	2.8E+06	N/A	N/A
Di-n-Butyl Phthalate	N/A	N/A	1.2E+04	None	None	2.0E+03	4.5E+03	N/A	N/A	1.2E+04	N/A	N/A
2,4 Dinitrophenol	N/A	N/A	1.4E+04	None	None	6.9E+01	5.3E+03	N/A	N/A	1.4E+04	N/A	N/A
2-Methyl-4,6-Dinitrophenol	N/A	N/A	7.2E+02	None	None	1.3E+01	2.8E+02	N/A	N/A	7.2E+02	N/A	N/A
2,4-Dinitrotoluene	N/A	N/A	3.2E+02	None	None	1.1E+00	3.4E+01	N/A	N/A	3.2E+02	N/A	N/A
Dioxin +	N/A	N/A	1.3E-07	None	None	5.0E-08	5.1E-08	N/A	N/A	1.3E-07	N/A	N/A
1,2-Diphenylhydrazine	N/A	N/A	1.9E+01	None	None	3.6E-01	2.0E+00	N/A	N/A	1.9E+01	N/A	N/A
Alpha-Endosulfan	6.1E-01	2.0E-01	2.3E+02	2.2E-01	5.6E-02	6.2E+01	8.9E+01	6.1E-01	2.0E-01	2.3E+02	6.1E-01	2.0E-01
Beta-Endosulfan	6.1E-01	2.0E-01	2.3E+02	2.2E-01	5.6E-02	6.2E+01	8.9E+01	6.1E-01	2.0E-01	2.3E+02	6.1E-01	2.0E-01
Alpha+Beta-Endosulfan	6.1E-01	2.0E-01	N/A	2.2E-01	5.6E-02	None	None	6.1E-01	2.0E-01	N/A	6.1E-01	2.0E-01
Endosulfan Sulfate	N/A	N/A	2.3E+02	None	None	6.2E+01	8.9E+01	N/A	N/A	2.3E+02	N/A	N/A
Endrin	2.4E-01	1.3E-01	1.6E-01	8.6E-02	3.6E-02	5.9E-02	6.0E-02	2.4E-01	1.3E-01	1.6E-01	2.4E-01	1.3E-01
Endrin Aldehyde	N/A	N/A	7.8E-01	None	None	2.9E-01	3.0E-01	N/A	N/A	7.8E-01	N/A	N/A
Ethylbenzene	N/A	N/A	5.4E+03	None	None	5.3E+02	2.1E+03	N/A	N/A	5.4E+03	N/A	N/A
Fluoranthene	N/A	N/A	3.6E+02	None	None	1.3E+02	1.4E+02	N/A	N/A	3.6E+02	N/A	N/A
Fluorene	N/A	N/A	1.4E+04	None	None	1.1E+03	5.3E+03	N/A	N/A	1.4E+04	N/A	N/A
Foaming Agents (MBAS)	N/A	N/A	N/A	None	None	5.0E+02	None	N/A	N/A	N/A	N/A	N/A
Guthion	N/A	3.5E-02	N/A	None	1.0E-02	None	None	N/A	3.5E-02	N/A	N/A	3.5E-02
Heptachlor	1.5E+00	1.3E-02	7.5E-03	5.2E-01	3.8E-03	7.9E-04	7.9E-04	1.5E+00	1.3E-02	7.5E-03	1.5E+00	1.3E-02
Heptachlor Epoxide	1.5E+00	1.3E-02	3.7E-03	5.2E-01	3.8E-03	3.9E-04	3.9E-04	1.5E+00	1.3E-02	3.7E-03	1.5E+00	1.3E-02
Hexachlorobenzene	N/A	N/A	2.8E-02	None	None	2.8E-03	2.9E-03	N/A	N/A	2.8E-02	N/A	N/A
Hexachlorobutadiene	N/A	N/A	1.7E+03	None	None	4.4E+00	1.8E+02	N/A	N/A	1.7E+03	N/A	N/A

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

Facility Name: Mt. Jackson STP Receiving Stream: North Fork Shenandoah River			POST - EXPANSION WATER QUALITY CRITERIA 0.700 MGD Discharge Flow - Mix per "Mixer"						MOST RESTRICTIVE WASTE LOAD ALLOCATIONS 0.700 MGD Discharge Flow		
ANTIDEGRADATION			WASTE LOAD ALLOCATIONS						WASTE LOAD ALLOCATIONS		
0.700 MGD Discharge - 100% Stream Mix			0.700 MGD Discharge Flow - Mix per "Mixer"						0.700 MGD Discharge Flow		
Toxic Parameter and Form	Aquatic Protection		Human Health		Human Health			Aquatic Protection		Human Health	
	Acute	Chronic			Public Water Supplies	Other Surface Waters		Acute	Chronic		
Hexachlorocyclohexane Alpha-BHC	N/A	N/A	4.7E-01	None	2.6E-02	4.9E-02		N/A	N/A	4.7E-01	
Hexachlorocyclohexane Beta-BHC	N/A	N/A	1.6E+00	None	9.1E-02	1.7E-01		N/A	N/A	1.6E+00	
Hexachlorocyclohexane Gamma-BHC (Lindane)	2.6E+00	N/A	1.7E+01	9.5E-01	9.8E-01	1.8E+00		2.6E+00	N/A	1.7E+01	
Hexachlorocyclopentadiene	N/A	N/A	2.8E+03	None	4.0E+01	1.1E+03		N/A	N/A	2.8E+03	
Hexachloroethane	N/A	N/A	3.1E+02	None	1.4E+01	3.3E+01		N/A	N/A	3.1E+02	
Hydrogen Sulfide	N/A	7.0E+00	N/A	None	None	None		N/A	7.0E+00	N/A	
Indeno(1,2,3-cd)pyrene	N/A	N/A	1.7E+00	None	3.8E-02	1.8E-01		N/A	N/A	1.7E+00	
Iron	N/A	N/A	N/A	None	3.0E+02	None		N/A	N/A	N/A	
Isophorone	N/A	N/A	9.1E+04	None	3.5E+02	9.6E+03		N/A	N/A	9.1E+04	
Kepone	N/A	Zero	N/A	None	None	None		N/A	Zero	N/A	
Lead	6.9E+02	9.7E+01	N/A	2.9E+02	3.1E+01	1.5E+01		6.9E+02	9.7E+01	N/A	
Malathion	N/A	3.5E-01	N/A	None	1.0E-01	None		N/A	3.5E-01	N/A	
Manganese	N/A	N/A	N/A	None	5.0E+01	None		N/A	N/A	N/A	
Mercury	3.9E+00	2.7E+00	N/A	1.4E+00	7.7E-01	None		3.9E+00	2.7E+00	N/A	
Methyl Bromide	N/A	N/A	3.9E+03	None	4.7E+01	1.5E+03		N/A	N/A	3.9E+03	
Methylene Chloride	N/A	N/A	5.6E+04	None	4.6E+01	5.9E+03		N/A	N/A	5.6E+04	
Methoxychlor	N/A	1.0E-01	N/A	None	3.0E-02	1.0E+02		N/A	1.0E-01	N/A	
Mirex	N/A	Zero	N/A	None	Zero	None		N/A	Zero	N/A	
Nickel	8.3E+02	1.1E+02	1.2E+04	3.3E+02	3.5E+01	6.1E+02		8.3E+02	1.1E+02	1.2E+04	
Nitrate (as N)	N/A	N/A	N/A	None	None	1.0E+01 mg/L		N/A	N/A	N/A	
Nitrobenzene	N/A	N/A	1.8E+03	None	None	6.9E+02		N/A	N/A	1.8E+03	
N-Nitrosodimethylamine	N/A	N/A	2.9E+02	None	None	3.0E+01		N/A	N/A	2.9E+02	
N-Nitrosodiphenylamine	N/A	N/A	5.7E+02	None	None	6.0E+01		N/A	N/A	5.7E+02	
N-Nitrosodi-n-propylamine	N/A	N/A	4.9E+01	None	None	5.1E+00		N/A	N/A	4.9E+01	
Nonylphenol	7.8E+01	2.3E+01	N/A	2.8E+01	6.6E+00	None		7.8E+01	2.3E+01	N/A	
Parathion	1.8E-01	4.5E-02	N/A	6.5E-02	1.3E-02	None		1.8E-01	4.5E-02	N/A	
PCB Total	N/A	4.9E-02	6.1E-03	None	1.4E-02	6.4E-04		N/A	4.9E-02	6.1E-03	
Pentachlorophenol	4.4E+01	4.2E+01	2.9E+02	1.6E+01	1.2E+01	2.7E+00		4.4E+01	4.2E+01	2.9E+02	
Phenol	N/A	N/A	2.2E+06	None	None	1.0E+04		N/A	N/A	2.2E+06	
Pyrene	N/A	N/A	1.0E+04	None	None	8.3E+02		N/A	N/A	1.0E+04	
RadNuc - Beta Part & Photon Act	N/A	N/A	N/A	None	None	4.0E+00 mrem		N/A	N/A	1.0E+02 mrem	
RadNuc - Gross Alpha Part Act	N/A	N/A	N/A	None	None	1.5E+01 pCi/L		N/A	N/A	N/A	
RadNuc - Radium 226 + 228	N/A	N/A	N/A	None	None	5.0E+00 pCi/L		N/A	N/A	N/A	
RadNuc - Uranium	N/A	N/A	N/A	None	None	3.0E+01		N/A	N/A	N/A	
Selenium, Total Recoverable	5.6E+01	1.7E+01	1.1E+04	2.0E+01	5.0E+00	1.7E+02		5.6E+01	1.7E+01	1.1E+04	
Silver	2.6E+01	N/A	N/A	1.2E+01	None	None		2.6E+01	N/A	N/A	
Sulfate	N/A	N/A	N/A	None	None	2.5E+02 mg/L		N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	N/A	N/A	3.8E+02	None	None	1.7E+00		N/A	N/A	3.8E+02	
Tetrachloroethylene	N/A	N/A	3.1E+02	None	None	6.9E+00		N/A	N/A	3.1E+02	
Thallium	N/A	N/A	1.2E+00	None	None	2.4E-01		N/A	N/A	1.2E+00	
Toluene	N/A	N/A	1.6E+04	None	None	5.1E+02		N/A	N/A	1.6E+04	
Total Dissolved Solids	N/A	N/A	N/A	None	None	5.0E+05		N/A	N/A	N/A	
Toxaphene	2.0E+00	7.0E-04	2.7E-02	7.3E-01	2.0E-04	2.8E-03		2.0E+00	7.0E-04	2.7E-02	
Tributyltin	1.3E+00	2.5E-01	N/A	4.6E-01	7.2E-02	None		1.3E+00	2.5E-01	N/A	
1,2,4-Trichlorobenzene	N/A	N/A	1.8E+02	None	None	3.5E+01		N/A	N/A	1.8E+02	
1,1,2-Trichloroethane	N/A	N/A	1.5E+03	None	None	5.9E+00		N/A	N/A	1.5E+03	
Trichloroethylene	N/A	N/A	2.9E+03	None	None	2.5E+01		N/A	N/A	2.9E+03	
2,4,6-Trichlorophenol	N/A	N/A	2.3E+02	None	None	1.4E+01		N/A	N/A	2.3E+02	
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	N/A	N/A	N/A	None	None	5.0E+01		N/A	N/A	N/A	
Vinyl Chloride	N/A	N/A	2.3E+02	None	None	2.5E-01		N/A	N/A	2.3E+02	
Zinc	6.2E+02	7.2E+02	6.7E+04	2.1E+02	2.0E+02	7.4E+03		6.2E+02	7.2E+02	6.7E+04	

PROTOCOL FOR THE EVALUATION OF THE EFFLUENT – TOXIC POLLUTANTS

Toxic pollutants were evaluated in accordance with OWP Guidance Memo No. 00-2011. Acute and Chronic WLAs (WLA_a and WLA_c) were analyzed according to the protocol below using a statistical approach (STAT.exe) to determine the necessity and magnitude of limits. Human Health WLA (WLA_{hh}) were analyzed according to the same protocol through a simple comparison with the effluent data. If the WLA_{hh} exceeded the effluent datum or data mean, no limits were required. If the effluent datum or data mean exceeded the WLA_{hh} , the WLA_{hh} was imposed as the limit.

Since there are no data available for any toxic pollutants immediately upstream of this discharge, all upstream (background) pollutant concentrations are assumed to be "0".

The steps used in evaluating the effluent data are as follows:

- A. If all data are reported as "below detection" or $<$ the required Quantification Level (QL), and at least one detection level is $=$ the required QL, then the pollutant is considered to be not significantly present in the discharge and no further monitoring is required.
- B. If all data are reported as "below detection", and all detection levels are $>$ the required QL, then an evaluation is performed in which the pollutant is assumed present at the lowest reported detection level.
 - B.1. If the evaluation indicates that no limits are needed, then the existing data set is adequate and no further monitoring is required.
 - B.2. If the evaluation indicates that limits are needed, then the existing data set is inadequate to make a determination and additional monitoring is required.
- C. If any data value is reported as detectable at or above the required QL, then the data are adequate to determine whether effluent limits are needed.
 - C.1. If the evaluation indicates that no limits are needed, then no further monitoring is required.
 - C.2. If the evaluation indicates that limits are needed, then the limits and associated requirements are specified in the draft permit.
 - C.3. (Exception for Metals data only) If the evaluation indicates that limits are needed, but the data are reported as a form other than "Dissolved" (except for Selenium), then the existing data set is inadequate to make a determination and additional monitoring is required.

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Parameter	CASRN	Type	QL (µg/L)	Data (µg/L unless noted otherwise)	Source of Data	Data Eval
Acenaphthene	83-32-9	B	10.0	<10	a	A
Acrolein	107-02-8	V	---	<50	a	A
Acrylonitrile ^C	107-13-1	V	---	<10	a	A
Aldrin ^C	309-00-2	P	0.05	<0.02	a	A
Ammonia-N (mg/L) (Annual) (June-Dec)	766-41-7	X	0.2 mg/L	Default = 9 mg/L	b	C.2
Ammonia-N (mg/L) (Wet Season) (Jan-May)	766-41-7	X	0.2 mg/L	Default = 9 mg/L	b	C.1
Anthracene	120-12-7	B	10.0	<10	a	A
Antimony, dissolved	7440-36-0	M	0.2	<10	a	B.1
Arsenic, dissolved	7440-38-2	M	1.0	<4	a	B.1
Barium	7440-39-3	M	---	Applicable to PWS waters only	---	---
Benzene ^C	71-43-2	V	10.0	<10	a	A
Benzidine ^C	92-87-5	B	---	<50	a	A
Benzo (a) anthracene ^C	56-55-3	B	10.0	<10	a	A
Benzo (b) fluoranthene ^C	205-99-2	B	10.0	<10	a	A
Benzo (k) fluoranthene ^C	207-08-9	B	10.0	<10	a	A
Benzo (a) pyrene ^C	50-32-8	B	10.0	<10	a	A
Bis(2-Chloroethyl) Ether ^C	111-44-4	B	---	<10	a	A
Bis(2-Chloroisopropyl) Ether	108-60-1	B	---	<10	a	A
Bis (2-ethylhexyl) Phthalate ^C	117-81-7	B	10.0	<10	a	A
Bromoform ^C	75-25-2	V	10.0	<10	a	A
Butylbenzylphthalate	85-68-7	B	10.0	<10	a	A
Cadmium, dissolved	7440-43-9	M	0.3	<2	a	B.1
Carbon Tetrachloride ^C	56-23-5	V	10.0	<10	a	A
Chlordane ^C	57-74-9	P	0.2	<0.02	e	A
Chloride (mg/L)	16887-00-6	X	---	325	a	C.1
TRC (mg/L)	7782-50-5	X	0.1 mg/L	Default = 20 mg/L	b	C.2
Chlorobenzene	108-90-7	V	50.0	<1	a	A
Chlorodibromomethane ^C	124-48-1	V	10.0	<1	a	A
Chloroform	67-66-3	V	10.0	<1	a	A
2-Chloronaphthalene	91-58-7	B	---	<10	a	A
2-Chlorophenol	95-57-8	A	10.0	<10	d	A
Chlorpyrifos	2921-88-2	P	---	<0.2	a	A
Chromium III, dissolved	16065-83-1	M	0.5	<1	a	B.1
Chromium VI, dissolved	18540-29-9	M	0.5	<1	e	B.1
Chromium, Total	7440-47-3	M	---	Applicable to PWS waters only	---	---
Chrysene ^C	218-01-9	B	10.0	<10	a	A
Copper, dissolved	7440-50-8	M	0.5	<10	a	B.1
Cyanide, Free	57-12-5	X	10.0	<10	a	A
DDD ^C	72-54-8	P	0.1	<0.02	a	A
DDE ^C	72-55-9	P	0.1	<0.02	a	A
DDT ^C	50-29-3	P	0.1	<0.02	a	A
Demeton	8065-48-3	P	---	<1.0	a	A
Diazinon	333-41-5	P	---	<1	a	A
Dibenz(a,h)anthracene ^C	53-70-3	B	20.0	<10	a	A

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Parameter	CASRN	Type	QL (µg/L)	Data (µg/L unless noted otherwise)	Source of Data	Data Eval
1,2-Dichlorobenzene	95-50-1	B	10.0	<10	a	A
1,3-Dichlorobenzene	541-73-1	B	10.0	<10	a	A
1,4-Dichlorobenzene	106-46-7	B	10.0	<10	a	A
3,3-Dichlorobenzidine ^C	91-94-1	B	---	<10	a	A
Dichlorobromomethane ^C	75-27-4	V	10.0	<1	a	A
1,2-Dichloroethane ^C	107-06-2	V	10.0	<1	a	A
1,1-Dichloroethylene	75-35-4	V	10.0	<1	a	A
1,2-trans-dichloroethylene	156-60-5	V	---	<1	a	A
2,4-Dichlorophenol	120-83-2	A	10.0	<10	a	A
2,4-Dichlorophenoxy acetic acid (syn. = 2,4-D)	94-75-7	P	---	Applicable to PWS waters only	---	---
1,2-Dichloropropane ^C	78-87-5	V	---	<1	a	A
1,3-Dichloropropene ^C	542-75-6	V	---	<1	a	A
Dieldrin ^C	60-57-1	P	---	<0.02	a	A
Diethyl Phthalate	84-66-2	B	10.0	<10	a	A
2,4-Dimethylphenol	105-67-9	A	10.0	<10	a	A
Dimethyl Phthalate	131-11-3	B	---	<10	a	A
Di-n-Butyl Phthalate	84-74-2	B	10.0	<10	a	A
2,4-Dinitrophenol	51-28-5	A	---	<50	a	A
2-Methyl-4,6-Dinitrophenol	534-52-1	A	---	<50	a	A
2,4-Dinitrotoluene ^C	121-14-2	B	10.0	<10	a	A
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin)	1746-01-6	X	0.01	Applicable to Paper Mills & Oil Refineries only	---	---
1,2-Diphenylhydrazine ^C	122-66-7	B	---	<10	a	A
Alpha-Endosulfan (syn = Alpha-Endosulfan I)	959-98-8	P	0.1	<0.02	a	A
Beta-Endosulfan (syn = Alpha-Endosulfan II)	33213-65-9	P	0.1	<0.02	a	A
Alpha-Endosulfan + Beta-Endosulfan		P	---	<0.02	a	A
Endosulfan Sulfate	1031-07-8	P	0.1	<0.02	a	A
Endrin	72-20-8	P	0.1	<0.02	a	A
Endrin Aldehyde	7421-93-4	P	---	<0.02	a	A
Ethylbenzene	100-41-4	V	10.0	<1	a	A
Fluoranthene	206-44-0	B	10.0	<10	a	A
Fluorene	86-73-7	B	10.0	<10	a	A
Foaming Agents		X	---	Applicable to PWS waters only	---	---
Hardness (mg/L as CaCO ₃)				450	c	---
Guthion	86-50-0	P	---	<1.0	a	A
Heptachlor ^C	76-44-8	P	0.05	<0.02	a	A
Heptachlor Epoxide ^C	1024-57-3	P	---	<0.02	a	A
Hexachlorobenzene ^C	118-74-1	B	---	<10	a	A
Hexachlorobutadiene ^C	87-68-3	B	---	<10	a	A
Hexachlorocyclohexane Alpha-BHC ^C	319-84-6	P	---	<0.02	a	A
Hexachlorocyclohexane Beta-BHC ^C	319-85-7	P	---	<0.02	a	A
Hexachlorocyclohexane Gamma-BHC ^C (syn. = Lindane)	58-89-9	P	---	<0.02	a	A
Hexachlorocyclopentadiene	77-47-4	B	---	<50	a	A

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Hexachloroethane ^C	67-72-1	B	---	<10	a	A
Hydrogen Sulfide	7783-06-4	X	---	<180	f	A
Indeno (1,2,3-cd) pyrene ^C	193-39-5	B	20.0	<10	a	A
Iron, dissolved	7439-89-6	M	1.0	Applicable to PWS waters only	---	---
Isophorone ^C	78-59-1	B	10.0	<10	a	A
Kepone	143-50-0	P	---	<5	a	A
Lead, dissolved	7439-92-1	M	0.5	<2	a	B.1
Malathion	121-75-5	P	---	<1	a	A
Manganese	7439-96-5	M	0.2	Applicable to PWS waters only	---	---
Mercury, dissolved	7439-97-6	M	1.0	<0.2	a	A
Methyl Bromide	74-83-9	V	---	<1	a	A
Methylene Chloride ^C	75-09-2	V	20.0	<1	a	A
Methoxychlor	72-43-5	P	---	<0.02	a	A
Mirex	2385-85-5	P	---	<0.05	a	A
Nickel, dissolved	7440-02-0	M	0.5	<10	a	B.1
Nitrate (as N)	14797-55-8	X	---	Applicable to PWS waters only	---	---
Nitrobenzene	98-95-3	B	10.0	<10	a	A
N-Nitrosodimethylamine ^C	62-75-9	B	---	<10	a	A
N-Nitrosodiphenylamine ^C	86-30-6	B	---	<10	a	A
N-Nitrosodi-n-propylamine ^C	621-64-7	B	---	<10	a	A
Nonylphenol	104-40-51	A	---	<5	a	A
Parathion	56-38-2	P	---	<1.0	a	A
PCB Total ^C	1336-36-3	p	---	<0.1	a	A
Pentachlorophenol ^C	87-86-5	A	50.0	<50	a	A
Phenol	108-95-2	A	10.0	<10	a	A
Pyrene	129-00-0	B	10.0	<10	a	A
Beta Particle & Photon Activity (mrem/yr)		R	---	Applicable to PWS waters only	---	---
Combined Radium 226 and 228 (pCi/L)		R	---	Applicable to PWS waters only	---	---
Gross Alpha Particle Activity (pCi/L)		R	---	Applicable to PWS waters only	---	---
Uranium		R		Applicable to PWS waters only	---	---
Selenium, total recoverable	7782-49-2	M	2.0	<2	a	A
Silver, dissolved	7440-22-4	M	0.2	<4	a	B.1
Sulfate	14808-79-8	X	---	Applicable to PWS waters only	---	---
1,1,2,2-Tetrachloroethane ^C	79-34-5	V	---	<1	a	A
Tetrachloroethylene ^C	127-18-4	V	10.0	<1	a	A
Thallium, dissolved	7440-28-0	M	---	<4	a	A
Toluene	108-88-3	V	10.0	<1	a	A
Total dissolved solids		X	---	Applicable to PWS waters only	---	---
Toxaphene ^C	8001-35-2	P	5.0	<1.0	a	A
Tributyltin	60-10-5	P	---	<0.03	a	A
1,2,4-Trichlorobenzene	120-82-1	B	10.0	<10	a	A
1,1,2-Trichloroethane ^C	79-00-5	V	---	<1	a	A
Trichloroethylene ^C	79-01-6	V	10.0	<1	a	A
2,4,6-Trichlorophenol ^C	88-06-2	A	10.0	<10	a	A

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2-(2,4,5-Trichlorophenoxy) propionic acid (synonym = Silvex or 2,4,5-TP)	93-72-1	P	---	Applicable to PWS waters only	---	---
Vinyl Chloride ^C	75-01-4	V	10.0	<1	a	A
Zinc, dissolved	7440-66-6	M	2.0	10.3	a	B.1

"Type" column indicates a category assigned to the referenced substance (see below):

A = Acid Extractable Organic Compounds

B = Base/Neutral Extractable Organic Compounds

M = Metals

p = PCBs

P = Pesticides

R = Radionuclides

V = Volatile Organic Compounds

X = Miscellaneous Compounds and Parameters

The **superscript "C"** following the parameter name indicates that the substance is a known or suspected carcinogen; human health criteria at risk level 10^{-5} .

CASRN = Chemical Abstract Service Registry Number for each parameter is referenced in the current Water Quality Standards. A unique numeric identifier designating only one substance. The Chemical Abstract Service is a division of the American Chemical Society.

"Source of Data" codes:

a = Attachment A monitoring received 08.23.11

b = default effluent concentration

c = DEQ sample collected 08.15.06

d = Form 2A application dated 06.30.11 with 2-Chlorophenol result

e = Email dated 09.14.11 with Certificate of Analysis from lab regarding Chlordane and Total Chromium

f = Sample collected 9.26.11

"Data Evaluation" codes:

See section titled PROTOCOL FOR THE EVALUATION OF EFFLUENT TOXIC POLLUTANTS for an explanation of the code used.

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STAT.EXE RESULTS:

<p><u>Ammonia-N (Jun-Dec)(Annual Season)</u> Chronic averaging period = 30 WLAa = 9 WLAc = 3 Q.L. = 0.2 # samples/mo. = 12 # samples/wk. = 3</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 9 Variance = 29.16 C.V. = 0.6 97th percentile daily values = 21.9007 97th percentile 4 day average = 14.9741 97th percentile 30 day average= 10.8544 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>A limit is needed based on Chronic Toxicity Maximum Daily Limit = 6.05301028024893 Average Weekly Limit = 4.42743623504918 Average Monthly Limit = 3.29786130871063</p> <p>The data are: 9</p>	<p><u>Ammonia-N (Jan-May)(Wet Season)</u> Chronic averaging period = 30 WLAa = 29 WLAc = 13 Q.L. = 0.2 # samples/mo. = 12 # samples/wk. = 3</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 9 Variance = 29.16 C.V. = 0.6 97th percentile daily values = 21.9007 97th percentile 4 day average = 14.9741 97th percentile 30 day average= 10.8544 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 9</p>	<p><u>TRC</u> Chronic averaging period = 4 WLAa = 0.053 WLAc = 0.038 Q.L. = 0.1 # samples/mo. = 90 # samples/wk. = 21</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 20 Variance = 144 C.V. = 0.6 97th percentile daily values = 48.6683 97th percentile 4 day average = 33.2758 97th percentile 30 day average= 24.1210 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>A limit is needed based on Acute Toxicity Maximum Daily Limit = 0.053 Average Weekly Limit = 2.75976708163853E-02 Average Monthly Limit = 2.43711316761541E-02</p> <p>The data are: 20</p>
<p><u>Arsenic, Dissolved</u> Chronic averaging period = 4 WLAa = 950 WLAc = 520 Q.L. = 1.0 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 4 Variance = 5.76 C.V. = 0.6 97th percentile daily values = 9.73367 97th percentile 4 day average = 6.65516 97th percentile 30 day average= 4.82421 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 4</p>	<p><u>Chloride</u> Chronic averaging period = 4 WLAa = 2600 WLAc = 910 Q.L. = 0 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 325 Variance = 38025 C.V. = 0.6 97th percentile daily values = 790.860 97th percentile 4 day average = 540.731 97th percentile 30 day average= 391.967 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 325</p>	<p><u>Chromium III, Dissolved</u> Chronic averaging period = 4 WLAa = 2600 WLAc = 410 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 1 Variance = .36 C.V. = 0.6 97th percentile daily values = 2.43341 97th percentile 4 day average = 1.66379 97th percentile 30 day average= 1.20605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1</p>
<p><u>Chromium VI, Dissolved</u> Chronic averaging period = 4 WLAa = 45 WLAc = 38 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 1 Variance = .36 C.V. = 0.6 97th percentile daily values = 2.43341 97th percentile 4 day average = 1.66379 97th percentile 30 day average= 1.20605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1</p>	<p><u>Copper, Dissolved</u> Chronic averaging period = 4 WLAa = 65 WLAc = 51 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 10 Variance = 36 C.V. = 0.6 97th percentile daily values = 24.3341 97th percentile 4 day average = 16.6379 97th percentile 30 day average= 12.0605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 10</p>	<p><u>Lead, Dissolved</u> Chronic averaging period = 4 WLAa = 690 WLAc = 97 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 2 Variance = 1.44 C.V. = 0.6 97th percentile daily values = 4.86683 97th percentile 4 day average = 3.32758 97th percentile 30 day average= 2.41210 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 2</p>

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STAT.EXE RESULTS:

<p><u>Nickel, Dissolved</u> Chronic averaging period = 4 WLAa = 830 WLAc = 110 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 10 Variance = 36 C.V. = 0.6 97th percentile daily values = 24.3341 97th percentile 4 day average = 16.6379 97th percentile 30 day average= 12.0605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 10</p>	<p><u>Zinc, Dissolved</u> Chronic averaging period = 4 WLAa = 620 WLAc = 720 Q.L. = 2 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 10.3 Variance = 38.1924 C.V. = 0.6 97th percentile daily values = 25.0642 97th percentile 4 day average = 17.1370 97th percentile 30 day average= 12.4223 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 10.3</p>	<p><u>Cadmium, Dissolved</u> Chronic averaging period = 4 WLAa = 21 WLAc = 6.2 Q.L. = 0.3 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 2 Variance = 1.44 C.V. = 0.6 97th percentile daily values = 4.86683 97th percentile 4 day average = 3.32758 97th percentile 30 day average= 2.41210 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 2</p>
<p><u>Silver, Dissolved</u> Chronic averaging period = 4 WLAa = 26 WLAc = Q.L. = 0.2 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 4 Variance = 5.76 C.V. = 0.6 97th percentile daily values = 9.73367 97th percentile 4 day average = 6.65516 97th percentile 30 day average= 4.82421 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 4</p>		

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WHOLE EFFLUENT TOXICITY (WET) EVALUATION:

Applicability of TMP: The applicability criteria for a facility to perform toxicity testing is contained in the Department's Guidance Memo No. 00-2012, Toxics Management Program Implementation Guidance, 08/24/00, Part IV. This facility has been required to conduct WET testing because of a Significant Industrial User, Bowman Andros Products, LLC, which began discharging to the Mt. Jackson STP in 2009. Bowman Andros Products produces applesauce, apple butter and apple juice. The Town of Mt. Jackson regulates Bowman Andros based on BOD and the amount of flow the industry can discharge on a daily basis.

Design Flow: The 2007 permit contained design flow tiers of 0.20 MGD and 0.70 MGD. WET monitoring was not required until initiation of discharges from Bowman Andros. A Certificate to Operate for the upgrade and expansion of the Mt. Jackson STP to 0.70 MGD was issued on April 13, 2009.

Summary of Toxicity Testing: Tables 1 and 2 contain the results of the first quarterly acute and chronic toxicity testing under the new design flow of 0.70 MGD.

Testing Period: The testing period of July – September for conducting WET testing was established in the 2006 permit for the old design flow tier of 0.20 MGD. According to TMP guidance, when a facility begins toxicity testing under a new design flow tier, the toxicity testing is done quarterly to provide data over the course of a seasonal year. After the four quarters of testing, the Department may define the months in which the annual testing is required based on the results of the quarterly monitoring. Toxicity testing for the 0.70 MGD facility was conducted on July 19, 2011. This test will be acceptable as counting for the first quarterly testing under the 0.70 MGD facility.

Sample Type: Composite samples are considered representative of discharge quality.

Evaluation of Acute Instream Waste Concentration (IWCa):

The IWCa for Outfall 001 is 11.35% (See Table 3). Because the IWCa is less than 33%, an $LC_{50} = 100\%$ test/endpoint has been specified for use.

Evaluation of WLAs:

The February 15, 2011 Flow Frequency Determination indicates the 7Q10 and 1Q10 of the receiving stream. The following acute and chronic WLAs were generated from the Department's WETLim10.xls spreadsheet by entering the design flow, stream flows, and stream mix percentages for the respective stream flows (See Table 3):

	Acute WLAa	Acute WLAa,c	Chronic WLAc
Outfall 001	2.64294814	26.4294814	13.9285714

Where:

WLAa = Acute WLA

WLAa,c = Acute WLA expressed as chronic (WLAa X 10)

WLAc = Chronic WLA

The WLAs are used in the Department's Stat.exe program in order to perform a statistical evaluation of the acute and chronic test results. As indicated in Table 3, if the mean of the TUc (chronic Toxicity Unit) exceeds 8.37159057, a WET limit may be required. If the mean of the TUa (acute Toxicity Unit) data exceeds 1.0, then a WET limit may be required.

Acute Dilution Series:

The dilution series that is being recommended for the acute whole effluent toxicity monitoring is the standard 0.5 dilution series (100%, 50%, 25%, 12.5%, 6.25%).

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Chronic Dilution Series:

The dilution series that is being recommended for the chronic WET testing is contained in Table 4 as follows:

Dilution Series	1.4 %	4.2%	12.0 %	35 %	100.0 %
TUc	69.44	24.06	8.33	2.86	1.00

Stat.exe Limit Evaluation:

The WLAs are used in the Department's Stat.exe program in order to perform a statistical evaluation of the acute and chronic test results expressed as Toxicity Units (TUs). The toxicity data are analyzed separately by species and test type (acute or chronic). Table 5 includes the results of the Stat.exe evaluation. As a result of the evaluation, no WET limits are required.

Peer Reviewer: DMJ. 09.13.11

Table 1
Summary of Acute Toxicity Testing LC₅₀

Monitoring Period	Test Date	48-Hr. Static Acute <i>Ceriodaphnia dubia</i>		48-Hr Static Acute <i>Pimephales promelas</i>	
		TUa	% Survival in 100% Effluent	TUa	% Survival in 100% Effluent
1 st Qtr (7/1/11 – 9/30/11)	7/21/11 – 7/23/11	<1	100%	<1	100%
2 nd Qtr (10/1/11 – 12/31/11)	Not tested yet				

Table 2
Summary of Chronic Toxicity Testing

Monitoring Period	Test Date	Chronic 3-Brood Static Renewal Survival and Reproduction <i>Ceriodaphnia dubia</i> (TUc)				Chronic 7-Day Static Renewal Survival and Growth <i>Pimephales promelas</i> (TUc)			
		Survival (TUc)	Repro (TUc)	48-hr LC ₅₀	% Survival in 100%	Survival (TUc)	Growth (TUc)	48-hr LC ₅₀	% Survival in 100%
1 st Qtr (7/1/11 – 9/31/11)	7/19/11 – 7/26/11	1.0	2.04	>100	100	1.0	1.0	>100	100
2 nd Qtr (10/1/11 – 12/31/11)	Not tested yet								

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Table 3 - WETLim10.xls Spreadsheet

Spreadsheet for determination of WET test endpoints or WET limits																																								
Excel 97 Revision Date: 01/10/05 File: WETLIM10.xls (MIX.EXE required also)			<table border="1"> <tr> <th colspan="3">Acute Endpoint/Permit Limit</th> <th colspan="4">Use as LC₅₀ in Special Condition, as TU_a on DMR</th> </tr> <tr> <td>ACUTE</td> <td>2.0371576</td> <td>TU_a</td> <td>LC₅₀ =</td> <td>50</td> <td>% Use as</td> <td>2.00</td> <td>TU_a</td> </tr> <tr> <td>ACUTE WLA_a</td> <td>2.6429481</td> <td colspan="6">Note: Inform the permittee that if the mean of the data exceeds this TU_a: 1.0 a limit may result using WLA.EXE</td> </tr> </table>							Acute Endpoint/Permit Limit			Use as LC ₅₀ in Special Condition, as TU _a on DMR				ACUTE	2.0371576	TU _a	LC ₅₀ =	50	% Use as	2.00	TU _a	ACUTE WLA _a	2.6429481	Note: Inform the permittee that if the mean of the data exceeds this TU _a : 1.0 a limit may result using WLA.EXE													
Acute Endpoint/Permit Limit			Use as LC ₅₀ in Special Condition, as TU _a on DMR																																					
ACUTE	2.0371576	TU _a	LC ₅₀ =	50	% Use as	2.00	TU _a																																	
ACUTE WLA _a	2.6429481	Note: Inform the permittee that if the mean of the data exceeds this TU _a : 1.0 a limit may result using WLA.EXE																																						
Enter data in the cells with blue type:			<table border="1"> <tr> <th colspan="3">Chronic Endpoint/Permit Limit</th> <th colspan="4">Use as NOEC in Special Condition, as TU_c on DMR</th> </tr> <tr> <td>CHRONIC</td> <td>20.371576</td> <td>TU_c</td> <td>NOEC =</td> <td>5</td> <td>% Use as</td> <td>20.00</td> <td>TU_c</td> </tr> <tr> <td>BOTH*</td> <td>26.4294821</td> <td>TU_c</td> <td>NOEC =</td> <td>4</td> <td>% Use as</td> <td>25.00</td> <td>TU_c</td> </tr> <tr> <td>AML</td> <td>20.371576</td> <td>TU_c</td> <td>NOEC =</td> <td>5</td> <td>% Use as</td> <td>20.00</td> <td>TU_c</td> </tr> </table>							Chronic Endpoint/Permit Limit			Use as NOEC in Special Condition, as TU _c on DMR				CHRONIC	20.371576	TU _c	NOEC =	5	% Use as	20.00	TU _c	BOTH*	26.4294821	TU _c	NOEC =	4	% Use as	25.00	TU _c	AML	20.371576	TU _c	NOEC =	5	% Use as	20.00	TU _c
Chronic Endpoint/Permit Limit			Use as NOEC in Special Condition, as TU _c on DMR																																					
CHRONIC	20.371576	TU _c	NOEC =	5	% Use as	20.00	TU _c																																	
BOTH*	26.4294821	TU _c	NOEC =	4	% Use as	25.00	TU _c																																	
AML	20.371576	TU _c	NOEC =	5	% Use as	20.00	TU _c																																	
Entry Date:	09/09/11	ACUTE WLA _{a,c}		26.429481	Note: Inform the permittee that if the mean of the data exceeds this TU _c : 8.3715906																																			
Facility Name:	Mt. Jackson STP	CHRONIC WLA _c		13.928571																																				
VPDES Number:	VA0026441	* Both means acute expressed as chronic																																						
Outfall Number:	001																																							
% Flow to be used from MIX.EXE			Difuser /modeling study?																																					
Plant Flow:	0.7 MGD	76.89 %			Enter Y/N N																																			
Acute 1Q10:	7.11 MGD	100 %			Acute 1 :1																																			
Chronic 7Q10:	9.05 MGD				Chronic 1 :1																																			
Are data available to calculate CV? (Y/N)			N (Minimum of 10 data points, same species, needed)			Go to Page 2																																		
Are data available to calculate ACR? (Y/N)			N (NOEC<LC50, do not use greater/less than data)			Go to Page 3																																		
IWC _a	11.35096051	%	Plant flow/plant flow + 1Q10		NOTE: If the IWC _a is >33%, specify the NOAEC = 100% test/endpoint for use																																			
IWC _c	7.179487179	%	Plant flow/plant flow + 7Q10																																					
Dilution, acute	8.809827143		100/IWC _a																																					
Dilution, chronic	13.92857143		100/IWC _c																																					
WLA _a	2.642948143	Instream criterion (0.3 TU _a) X's Dilution, acute																																						
WLA _c	13.92857143	Instream criterion (1.0 TU _c) X's Dilution, chronic																																						
WLA _{a,c}	26.42948143	ACR X's WLA _a - converts acute WLA to chronic units																																						
ACR -acute/chronic ratio	10	LC50/NOEC (Default is 10 - if data are available, use tables Page 3)																																						
CV-Coefficient of variation	0.6	Default of 0.6 - if data are available, use tables Page 2)																																						
Constants eA	0.4109447	Default = 0.41																																						
eB	0.6010373	Default = 0.60																																						
eC	2.4334175	Default = 2.43																																						
eD	2.4334175	Default = 2.43 (1 samp)																																						
No. of sample 1			**The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The LTA _{a,c} and MDL using it are driven by the ACR.																																					
LTA _{a,c}	10.86105532	WLA _{a,c} X's eA																																						
LTA _c	8.371590964	WLA _c X's eB																																						
MDL** with LTA _{a,c}	26.42948208	TU _c	NOEC =	3.783653	(Protects from acute/chronic toxicity)		Rounded NOEC's %																																	
MDL** with LTA _c	20.37157596	TU _c	NOEC =	4.908800	(Protects from chronic toxicity)		NOEC = 4 %																																	
AML with lowest LTA	20.37157596	TU _c	NOEC =	4.908800	Lowest LTA X's eD		NOEC = 5 %																																	
IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU _c to TU _a																																								
MDL with LTA _{a,c}	2.642948208	TU _a	LC50 =	37.836534	%		Rounded LC50's %																																	
MDL with LTA _c	2.037157596	TU _a	LC50 =	49.088004	%		LC50 = 38 %																																	
								LC50 = 50																																

CHRONIC DILUTION SERIES TO RECOMMEND					
Table 4. - 0.70 MGD			Monitoring		
			% Effluent	TU _c	Limit
Dilution series based on data mean			12	8.371591	% Effluent
Dilution series to use for limit					5
Dilution factor to recommend:			0.346410162		0.223606798
Dilution series to recommend:			100.0	1.00	100.0
			34.6	2.89	22.4
			12.0	8.33	5.0
			4.2	24.06	1.1
			1.4	69.44	0.3
Extra dilutions if needed			0.50	200.47	0.06
			0.17	578.70	0.01
					1788.85
					8000.00

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Table 5 – Stat.exe Output

<p>Chemical = Acute WET C. dubia</p> <p>Chronic averaging period = 4</p> <p>WLAa = 2.6429481</p> <p>WLAc =</p> <p>Q.L. = 1</p> <p># samples/mo. = 1</p> <p># samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1</p> <p>Expected Value = 1</p> <p>Variance = .36</p> <p>C.V. = 0.6</p> <p>97th percentile daily values = 2.43341</p> <p>97th percentile 4 day average = 1.66379</p> <p>97th percentile 30 day average= 1.20605</p> <p># < Q.L. = 0</p> <p>Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1</p>	<p>Chemical = Chronic WET C. dubia</p> <p>Chronic averaging period = 4</p> <p>WLAa,c = 26.429481</p> <p>WLAc = 13.928571</p> <p>Q.L. = 1</p> <p># samples/mo. = 1</p> <p># samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1</p> <p>Expected Value = 2.04</p> <p>Variance = 1.49817</p> <p>C.V. = 0.6</p> <p>97th percentile daily values = 4.96417</p> <p>97th percentile 4 day average = 3.39413</p> <p>97th percentile 30 day average= 2.46034</p> <p># < Q.L. = 0</p> <p>Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 2.04</p>
<p>Chemical = Acute WET P. promelas</p> <p>Chronic averaging period = 4</p> <p>WLAa = 2.6429481</p> <p>WLAc =</p> <p>Q.L. = 1</p> <p># samples/mo. = 1</p> <p># samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1</p> <p>Expected Value = 1</p> <p>Variance = .36</p> <p>C.V. = 0.6</p> <p>97th percentile daily values = 2.43341</p> <p>97th percentile 4 day average = 1.66379</p> <p>97th percentile 30 day average= 1.20605</p> <p># < Q.L. = 0</p> <p>Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1</p>	<p>Chemical = Chronic WET, P. promelas</p> <p>Chronic averaging period = 4</p> <p>WLAa,c = 26.429481</p> <p>WLAc = 13.928571</p> <p>Q.L. = 1</p> <p># samples/mo. = 1</p> <p># samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1</p> <p>Expected Value = 1</p> <p>Variance = .36</p> <p>C.V. = 0.6</p> <p>97th percentile daily values = 2.43341</p> <p>97th percentile 4 day average = 1.66379</p> <p>97th percentile 30 day average= 1.20605</p> <p># < Q.L. = 0</p> <p>Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1</p>
<p>Chemical = Midpoint Check</p> <p>Chronic averaging period = 4</p> <p>WLAa,c = 26.429481</p> <p>WLAc = 13.928571</p> <p>Q.L. = 1</p> <p># samples/mo. = 1</p> <p># samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1</p> <p>Expected Value = 8.33</p> <p>Variance = 24.9800</p> <p>C.V. = 0.6</p> <p>97th percentile daily values = 20.2703</p> <p>97th percentile 4 day average = 13.8593</p> <p>97th percentile 30 day average= 10.0464</p> <p># < Q.L. = 0</p> <p>Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 8.33</p>	

APPENDIX C

BASES FOR PERMIT SPECIAL CONDITIONS

Tabulated below are the sections of the permit, with any changes and the reasons for the changes identified. Also provided is the basis for each of the permit special conditions.

Cover Page	<ul style="list-style-type: none">• Content and format as prescribed by the VPDES Permit Manual.
Part I.A.1.	<p>Effluent Limitations and Monitoring Requirements: <i>Updates Part I.A.2. of the previous permit with the following:</i></p> <ul style="list-style-type: none">• Changes were made to the format and introductory language.• Sample type for flow changed from T/I/R to TIRE.• Monthly Average Ammonia-N (Jun-Dec) limits were changed from 3.6 mg/L to 3.3 mg/L.• Maximum Weekly Average Ammonia-N (Jun-Dec) limits were changed from 4.9 mg/L to 4.4 mg/L.• Orthophosphate monitoring was removed per DEQ Guidance.• TN and TP annual concentration limits were added.• Nitrate plus Nitrite (as N) was removed since it is reported under the permittee's VPDES GP coverage (VAN010012).• TN and TP Monthly and Year to Date load monitoring was removed since they are reported under the permittee's VPDES GP coverage (VAN010012).• TN and TP Calendar Year load limits were removed since they are reported under the permittee's VPDES GP coverage (VAN010012).• Footnotes were updated to reflect current DEQ guidance and changes in the reissued permit.
Part I.B.	<p>Additional TRC And E. coli Limitations and Monitoring Requirements: <i>Updates Part I.C. of the previous permit.</i> More stringent TRC limits were included. The chlorine contact requirements were revised. The E. coli monitoring frequency was changed from 1/Week to 4/Month per DEQ Guidance. Required by Sewage Collection and Treatment (SCAT) Regulations and 9 VAC 25-260-170, Bacteria; other waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.</p>
Part I.C.	<p>Effluent Limitations and Monitoring Requirements – Additional Instructions: <i>Updates Part I.D. of the previous permit.</i> The QLs for TKN, TP, Orthophosphate, and Nitrate-Nitrite were deleted. The paragraph regarding significant digits was revised. Authorized by VPDES Permit Regulation, 9 VAC 25-31-190.J.4 and 220.I. This condition is necessary when a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values. Nutrient reporting calculations were updated. §62.1 44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.</p>
Part I.D.	<p>Pretreatment Program Requirements: <i>Updates Part I.E. of the previous permit.</i> VPDES Permit Regulation, 9 VAC 25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulations.</p>
Part I.E.	<p>Whole Effluent Toxicity (WET) Requirements: <i>Updates Part I.F. of the previous permit.</i> VPDES Permit Regulation, 9 VAC 25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act.</p>
Part I.F.1.	<p>95% Capacity Reopener: <i>Updates Part I.G.1. of the previous permit.</i> Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 4 for certain permits.</p>

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- Part I.F.2. **Indirect Dischargers:** *Identical to Part I.G.2. of the previous permit.* Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 1 for all STPs that receive waste from someone other than the owner of the treatment works.
- Part I.F.3. **Materials Handling/Storage:** *Identical to Part I.G.3. of the previous permit.* 9 VAC 25-31-280.B.2. requires that the types and quantities of “wastes, fluids, or pollutants which are ... treated, stored, etc.” be addressed for all permitted facilities.
- Part I.F.4. **O&M Manual Requirement:** *Updates Part I.G.4. of the previous permit.* Required by Code of Virginia 62.1-44.19, SCAT Regulations 9 VAC 25-790, and VPDES Permit Regulation 9 VAC 25-31-190 E for all STPs. Added requirement to describe procedures for documenting compliance with the permit requirement that there shall be no discharge of floating solids or visible foam in other than trace amounts.
- Part I.F.5. **CTC/CTO Requirement:** *Identical to Part I.G.5. of the previous permit.* Required by Code of Virginia 62.1-44.19, SCAT Regulations 9 VAC 25-790, and VPDES Permit Regulation 9 VAC 25-31-190 E for all STPs.
- Part I.F.6. **Licensed Operator Requirement:** *Updates Part I.G.6. of the previous permit.* The VPDES Permit Regulation 9 VAC 25-31-200 C, the Code of Virginia 54.1-2300 et seq., and Rules and Regulations for Waterworks and Wastewater Works Operators 18 VAC 160-20-10 et seq., require licensure of operators.
- Part I.F.7. **Reliability Class:** *Identical to Part I.G.7. of the previous permit.* Required by SCAT Regulations 9 VAC 25-790.
- Part I.F.8. **Treatment Works Closure Plan:** *Updates Part I.G.9. of the previous permit.* Required for all STPs per the State Water Control Law at 62.1-44.18.C. and 62.1-44.15:1.1., and the SCAT Regulations at 9 VAC 25-790-450.E.. and 9 VAC 25-790-120.E.3.
- Part I.F.9. **Reopeners:**
a. *Updates Part I.G.13. of the previous permit:* Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.
b. *New Requirement:* 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.
c. *Updates Part I.G.10. of the previous permit.* 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
d. *Updates Part H.2. of the previous permit:* Required by the VPDES Permit Regulation, 9 VAC 25-31-220.C, for all permits issued to STPs.
- Part I.F.10. **Suspension of concentration limits for E3/E4 facilities:** *New Requirement.* 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

Fact Sheet – VPDES Permit No. VA0026441 – Mt. Jackson STP

- Part I.F.11. **SMP Requirement:** *Updates Part H.1. of the previous permit.* VPDES Permit Regulation 9 VAC 25-31-100 P, 220 B 2, and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. Technical requirements are derived from the Virginia Pollution Abatement Permit Regulation (9 VAC 25-32-10 *et seq.*)
- Part II **Conditions Applicable to All VPDES Permits:** *Updates Part II of previous permit.* VPDES Permit Regulation 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed. Part II,A.4. language added for Virginia Environmental Laboratory Accreditation Program (VELAP) per 1 VAC 30, Chapter 45: Certification for Noncommercial Environmental Laboratories, and 1 VAC 30, Chapter 46: Accreditation for Commercial Laboratories.

DELETIONS

Tabulated below are the sections of the previous permit that were deleted and the basis for this action.

- Part I.A.1. **Effluent Limitations and Monitoring Requirements:** The 0.20 MGD flow tier is no longer needed since the facility has received a CTO for the 0.70 MGD facility.
- Parts I.A.3. & 3. **Sludge and Soil Limitations and Monitoring Requirements:** These requirements are no longer applicable since the facility no longer land applies biosolids under the authorization of this permit.
- Part I.B. **Additional Total Residual Chlorine Limitations and Monitoring Requirements – 0.20 MGD Flow Tier:** These requirements are no longer needed since the facility has received a CTO for the 0.70 MGD facility.
- Part I.G.8. **Water Quality Criteria Monitoring –** The Water Quality Criteria monitoring has been completed for the 0.70 MGD design flow.
- Part I.G.11. **General Permit Controls:** The permittee now has coverage under the nutrient GP.
- Part I.G.12. **Offsets -** At 4.0 mg/L TN and 0.3 mg/L TP, the loads will not be more than the facility's WLAs ; therefore, an offset plan is not needed.
- Part I.G.14. **Storm Water Management:** A No Exposure Certification was submitted on June 7, 2011.
- Part I.H.3. –
Part I.H.20. **Land Application of Sewage Sludge:** These requirements are no longer applicable since the facility no longer land applies biosolids under the authorization of this permit.
- Attachment A
Monitoring –
0.70 MGD The Attachment A monitoring for the 0.70 MGD facility has already been completed.
- Attachment B,
C1, C2 C3 and
C4 These attachments are no longer applicable since the facility no longer land applies biosolids under the authorization of this permit.

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Mt. Jackson STP

NPDES Permit Number: VA0026441

Permit Writer Name: Bev Carver

Date: 09.09.11

Major [☐] **Minor** [☒] **Industrial** [☐] **Municipal** [☒]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?			X
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance	
Duty to mitigate	Monitoring and records	Transfers	
Proper O & M	Signatory requirement	Monitoring reports	
Permit actions	Bypass	Compliance schedules	
	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Bev Carver</u>
Title	<u>Environmental Engineer Senior</u>
Signature	<u><i>Bev Carver</i></u>
Date	<u>09.09.11</u>